

Welcome to issue 27 of the 8th City Update, covering project and programme activity during May to July 2023.

Physical activity on all projects delivered as part of the Scotland's 8th City – the Smart City ERDF programme was completed, as scheduled, by 30th June. Delivery agents have a further three months (to 30th September) to complete all closure documentation including project closure report, case study, and outputs reporting.

At closure the 8th City programme has delivered almost 40 separate projects across seven cities, with overall investment in the region of £40M – of which over £16.5M was allocated via European Regional Development Fund (ERDF) grants.

By the end of September it is anticipated that 8th City partners will have reported on achievements in relation to output targets for Innovative Services and Datasets Opened for Innovation.

Behind these outputs there lies significant activity to support collaborations and partnership working across Scottish cities. This in turn has supported work to progress city and region priorities, as outlined in digital and smart city strategies.

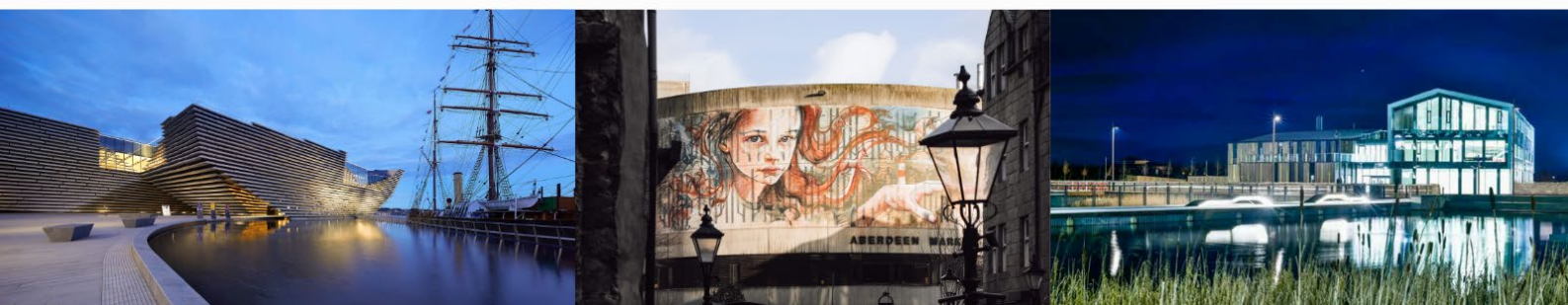
An overview of all city and project activity is presented on pages 2 to 17 of this newsletter; this includes projects addressing urban challenges in relation to data, energy, mobility, and public safety, as well as investment in enabling infrastructure to support future smart city ambitions.



Scotland's 8th City - The Smart City.



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ERDF 2014-20 Operational Programme

Strategic Intervention: Scotland's 8th City - the Smart City



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02 | 8TH CITY PROGRAMME OVERVIEW

The 'Scotland's 8th City – the Smart City' ERDF programme of collaborative Smart City initiatives has been co-developed and delivered by the cities of Aberdeen, Dundee, Edinburgh, Glasgow, Inverness, Perth, and Stirling.

Funded as a 'Sustainable Growth' Strategic Intervention (SI) within the 2014-2020 European Regional Development Fund (ERDF) operational programme, the 8th City programme was launched in November 2016 in support of Scottish Government's policy action of 'Ensuring our communities are healthy and sustainable'.

In adopting a 'Smart and Sustainable' approach to delivering projects 8th City programme partners have sought to accelerate and transform the delivery of services and infrastructure to make Scotland's cities more attractive, resilient, and sustainable.

This 8th City programme was delivered in two phases, with Phase 1 commencing in 2016 and running until March 2022. Phase 2 over-lapped and ran concurrently with the latter part of Phase 1 and continued until 30th June 2023, although reporting on outputs and project closure will continue until the end of September. This article offers an overview of Phase 1 and Phase 2 project activity and key achievements for projects delivered by each city.

The 8th City programme includes almost 40 separate projects, delivered across seven cities via investment of almost £40 million, including £500k from the SCA-administered Cities Investment Fund and ERDF support of over £16.5 million. For Inverness, in the Highlands & Islands (H&I) programme area, ERDF grant Intervention Rate was initially at 50% of project budget and, during Phase 2, was available to cover up to 70% of eligible project costs against an agreed budget; for the remaining cities, located in the Lowlands & Uplands area (LUPS), a lower rate of 40% ERDF grant was applied.

In securing ERDF grant funding to develop projects 8th City partners aim to expand smart and sustainable capabilities and deliver city priorities. The programme also supports improved community engagement, integration of service delivery, innovation, and a commitment to joint working and sharing of assets, information, and learning. This comprehensive collaborative approach to Smart and Sustainable Cities is unique, at this scale, across the UK.

The 8th City programme activity also contributes to work by each city in delivering their Net Zero targets in line with, or ahead of, Scottish Government target to reduce emissions of greenhouse gases to Net Zero by 2045. City partners have used data and digital technology as core elements to address city priorities and issues relating to data (including open data and data analytics), energy, lighting, mobility, waste, water, and delivery of essential services.

Operational Programme guidance produced in 2014 by Scottish Government - acting as the Managing Authority (MA) for ERDF and other European Structural Funds, noted that the 8th City programme would focus on "*sustainable urban development, through putting in place the enabling infrastructure and piloting 'smart city' technology and approaches...*".

Key highlights for each of the participating cities are noted over the following pages.



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Aberdeen Projects Overview:

8th City Programme - Phase 1:

Aberdeen delivered three projects in Phase 1.

The Aberdeen **Open Data** project delivered an Open Data Platform, via a collaborative procurement with Dundee, Inverness, Perth, and Stirling. For an overview of the approach taken to open data please see [case study](#).

The project completed in March 2020 and produced 1 Innovative Service and 14 Dataset outputs.

The **Intelligent Street Lighting (ISL)** project has delivered a network of smart LED lights controlled by an innovative hybrid Central Management System which uses LoRaWan open network gateways to control nodes on the lighting columns via a mesh network.

Connection of street lighting equipment to other transportation systems has enabled potential for autonomous energy and safety strategies such as Safer Routes to Schools.

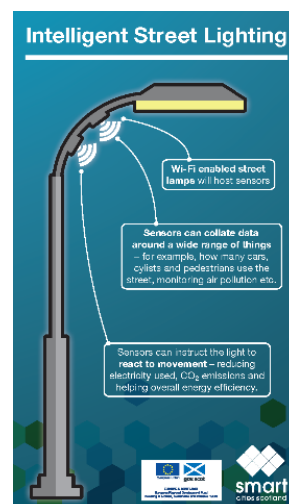
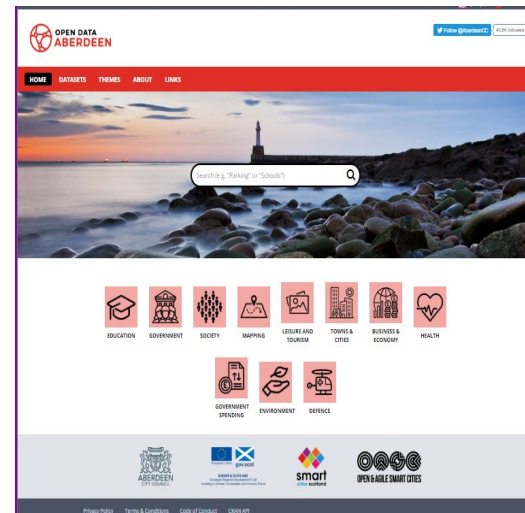
By deploying an ISL network Aberdeen noted anticipated annual savings of around £1M for street lighting costs from 2019. See [case study](#).

The project was completed in September 2019 and produced 1 Innovative Service and 4 Dataset outputs.

The **Aberdeen Digital Data Development (DDD)** project deployed sensor nodes to enhance Intelligent Transport Systems (ITS) strategies and provide a better managed transport network. See [case study](#).

The project was completed in December 2018 and produced 2 Innovative Services and 3 Dataset outputs.

8th City Programme - Phase 2: Aberdeen did not seek funding for Smart City projects as part of Phase 2. However, Aberdeen City Council officers remained engaged with the 8th City Advisory Group and other programme forums.



Dundee Projects Overview:

8th City Programme - Phase 1: Dundee delivered four projects in Phase 1.

The **Open Data** project had a focus on the development of an open data platform, <https://data.dundee.gov.uk/>, procured as part of a collaborative approach with Aberdeen, Inverness, Perth, and Stirling. Open Data officers undertook extensive engagement activity in Dundee; as an example of this, see [case study](#).

The Open Data project was completed in December 2019 and produced 1 Innovative Service and 43 Dataset outputs.

The Dundee **Public Safety** project was developed and delivered in partnership with Perth (and with Angus Council as a non-recipient of 8th City programme funding).

The cities combined resources and learning to work on a Tayside approach to delivering an integrated public safety network. The introduction of enhanced public space CCTV and video analytics capability is playing a key role in integrating the work of partners in tackling crime and disorder and promoting community safety.

The project has delivered a range of open data sets derived from the video analytics systems; these will support Dundee's response to city centre management and inform active travel planning.

The Public Safety project was completed in February 2022 and produced 1 Innovative Service and 9 Dataset outputs.



Smart Mobility has been a significant focus of Dundee's engagement with the 8th City programme. For Phase 1, the focus was on ShareMORE Mobility as a Service (MaaS) solutions with a range of innovation-led projects delivered via the [Dundee MILL](#) (Mobility Innovation Living Lab), a real-world test and experimentation environment for innovative mobility solutions. See [case study](#) for an overview of these projects.

The Smart Mobility project was completed in March 2022 and produced 5 Innovative Service with up to 10 Dataset outputs to be reported.

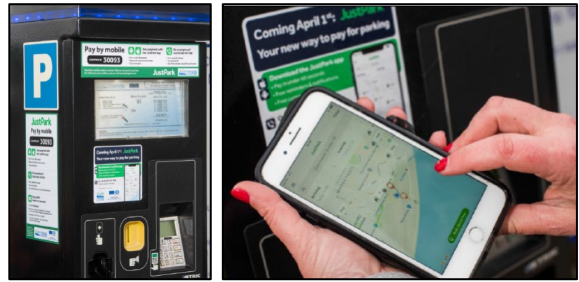
The Dundee **Smart Waste** project enabled the trial of smart technology and data sharing within the council's Street Scene operational framework by deploying Smart Waste technologies, including: Solar Powered Compactor Bins; Bin Fullness Sensors; Electric Vacuum Industrial Street Sweepers; Hand-Held Devices / Route Optimisation Software.

The Smart Waste project was completed in June 2019 and produced 3 Innovative Services and 6 Dataset outputs.

8th City Programme - Phase 2: Dundee delivered one further project in Phase 2.

A **Smart Mobility** project was initiated with the intention of identifying innovation mobility pilots to support the implementation of Dundee's Low Emission Zone (LEZ). This led to a focus on significantly extending the electric vehicle (EV) charging infrastructure, including the delivery of what is thought to be Britain's largest fully accessible EV charging site. See case study on page 21 of this newsletter.

Launched in April 2023, the Clepington Road EV charging oasis has been developed in line with the [PAS 1899:2022 Electric Vehicles Accessible Charging Specification](#) guidance. The project was recently shortlisted for the Best Practice in Diversity, Inclusivity and Accessibility category of the [National Transport Awards 2023](#) (winner announced in October).



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Edinburgh Projects Overview:

8th City Programme - Phase 1: Edinburgh delivered one project in Phase 1.

The **Smart Waste** project used IoT connectivity and smart bin sensors to focus on servicing of litter bins (with 3,400 bins sited across the city). This data driven project was seen as the first step towards introducing Smart Waste technology in Edinburgh.

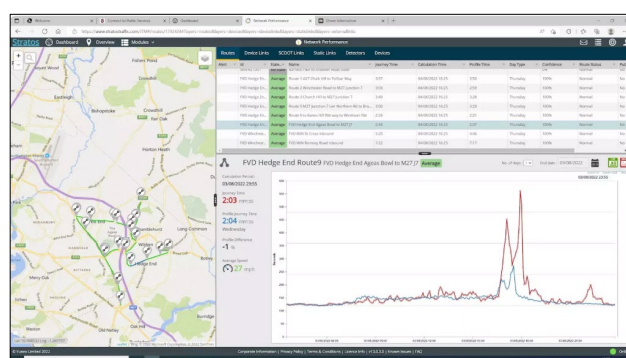
Learning from the delivery of this project has informed an ambitious approach to integrated city management, including street bin collections.

The Smart Waste project was completed in June 2020 and produced 2 Innovative Services and 3 Dataset outputs.

8th City Programme - Phase 2: Edinburgh delivered three projects in Phase 2.

The **City Operations Centre** was launched in December 2022 and uses cutting-edge, low-carbon technology designed to keep the city moving and Edinburgh's communities safe. Harnessing the latest technology to keep traffic and people moving, the City Operations Centre uses real-time data to monitor congestion and alleviate pinch points for wheeled vehicles and pedestrians. It also serves up insights into how city planners can reduce carbon emissions, as well as how to manage major events more effectively and aid emergency first responders.

Edinburgh's **Intelligent Infrastructure** project has the provision of a new UTMC (Urban Traffic Management & Control) system at its core. The UTMC system allows smart city technology sensors to implement traffic management strategies, communicating with the public through a range of on-line media, and collecting and storing data to inform more efficient transport planning decisions.



The Edinburgh **City Operations Capability** project provides a foundational platform and sensors to drive insight and proactive delivery of services. This includes deployment of environment sensors in social housing and the installation of 11,000 smart bin sensors placed in residential communal bins and in all of the street litter bins across the city. These sensors provide data which allows service teams to see accurate usage of bins, predict when they will overflow and to take proactive action.

Outputs for Edinburgh's three projects delivered in Phase 2 of the 8th City programme are currently being identified and assessed for reporting.



Additional	Geography	Valuation	Attributes	Smart Attributes	Referenced by	Notes	History
NES Collection Frequency	Not Applicable	Not Applicable	Notes				
NES Street	Not Applicable	Notes					
NES Number of Bins	1	Notes					
NES Sensor Vehicle	Not Applicable	Notes					
NES Bin Type	Not Applicable	Notes					
NES Bin Type	OSM	Notes					
NES Bin Size W320	7100 Litres	Notes					
NES Sensor Serial Number 1	C2301987002675	Notes					
NES Sensor Serial Number 2	NA	Notes					
OSM Address	NA	Notes					
OSM Bin Direction	NA	Notes					
Number of	1:50 Number	Notes					
OSM Bin Sensor (Vehicle)	Not Applicable	Notes					
OSM Litter Bin Route Day 6	LB01_26	Notes					
OSM Litter Press Route	Not Applicable	Notes					
OSM Bin Type	OSM 1100	Notes					
OSM Bin Collection Frequency	2	Notes					

Glasgow Projects Overview:

8th City Programme - Phase 1: Glasgow delivered five projects in Phase 1.

The Glasgow **Open Data/Analytics** project deployed a range of innovative services to enable data to be analysed as part of data-driven innovation and decision-making. A number of case studies have been produced by the project team, covering areas including Data Modelling, Design Led Thinking, and Child Poverty – see [case study](#).

The Open Data project was completed in March 2019 and produced 4 Innovative Services and 27 Dataset outputs.



By deploying an extensive city centre **Intelligent Street Lighting (ISL)** network Glasgow is connecting LED lamps with central management systems and network controls to achieve efficiency savings of around 70%; this significantly reduces energy costs and supports an estimated reduction in CO₂ emissions of around 700T per year. The Glasgow ISL project was completed in June 2019 and produced 1 Innovative Service and 4 Dataset outputs.



The Glasgow **Mobile Working** project delivered a range of innovative approaches across core services such as schools transport, bulk uplift, and environmental services. Deployment of app-based mobile working has led to significant benefits for council officers and for the users of those services. In delivering the project, Glasgow hosted a number of 'show and tell' events to share information and learning across the 8th City programme and beyond.

The Mobile Working project was completed in June 2021 and produced 10 Innovative Services outputs.

Working alongside almost all of the other Scottish cities, Glasgow delivered a **Smart Waste** project as part of a wider ERDF Operation involving Dundee, Edinburgh, Inverness, Perth, and Stirling. Glasgow's approach involved deployment of bin sensors to enable responsive and more efficient collections from street litter bins across pilot neighbourhoods in key areas of the city.

The Smart Waste project was completed in June 2019 and produced 1 Innovative Service and 4 Dataset outputs.

The **Smart Water Management** project - now known as Glasgow's **Smart Canal**, is a pioneering project and the first of its kind in Europe. By deploying sensors and predictive weather technology to dynamically manage water levels along the Forth & Clyde Canal, the project has enabled the canal to become a drainage route for excess surface water during high rainfall events. This, in turn, has opened up for development five major sites covering 110 hectares across North Glasgow. The project also delivers CO₂ savings of 500T per year by reducing the amount of wastewater requiring to be pumped.



The Smart Canal project has received six major awards for innovation, regeneration and infrastructure development, including: Best Innovation/Demand Management Initiative at the Association for Public Service Excellence (APSE) Awards 2021 and the Greatest Contribution to Scotland Award at the Scottish Civil Engineering Awards 2021.

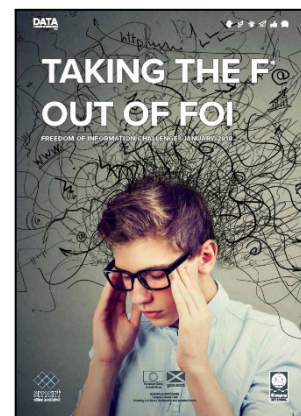
The project has attracted significant interest from other local authorities and international visitors who are rethinking how they can use their reservoirs and canal networks. See [case study](#) for an overview.

The Smart Canal project was completed in December 2021 and produced 2 Innovative Services and 2 Dataset outputs.



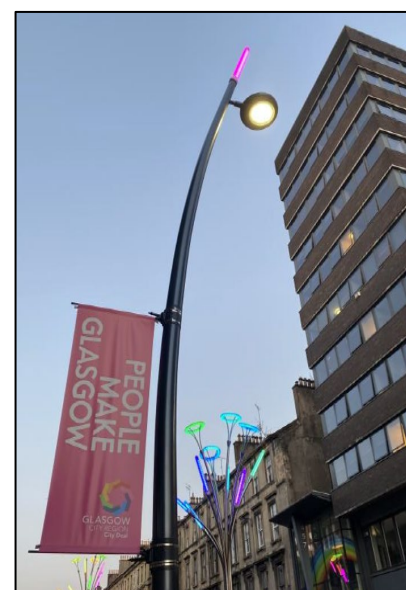
8th City Programme - Phase 2: Glasgow delivered a further four projects in Phase 2.

Open Data/Analytics project activity was continued, with the aim of promoting data driven decision making and support the development of public services based on open data, analytics, design and innovative engagement. Further case studies were produced, including COVID-19 Business Grants, and an Alcohol and Drugs Partnership Data Sharing [case study](#).



The Glasgow Data project was completed in March 2022 and produced 5 Innovative Services and 30 Dataset outputs.

Implementation and further expansion of **Intelligent Street Lighting** was also progressed as a Phase 2 project, with the lighting network being extended beyond the city centre. This capability supports Glasgow's ambition to be Net Carbon Zero by 2035. The project completed in June 2023 with outputs under review for reporting.



Mobile Working development was also continued into Phase 2 with a major project on Digital Citizen and Asset Management. This project aimed to make Glasgow's public services become better, more accessible, more efficient, and more effective.

The project covers the full range of service delivery - from initial customer and citizen interaction through to the closure of work and service requests and final notification back to the customer. This is being achieved through the development and deployment of mobile platforms and supporting back-office systems, designed to accommodate the required workflows and case management.

The Mobile Working project completed in June 2023 with outputs currently being prepared for reporting.

Glasgow's fourth project for Phase 2 involved deployment of a **Smart City Projects Co-ordinator** working with officers across the above projects to ensure that a strategic and systematic approach was taken in relation to project delivery, monitoring, and reporting.



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Inverness Projects Overview:

8th City Programme - Phase 1: Inverness delivered three projects in Phase 1.

Open Data project activity included the development of an open data platform, procured as part of a collaborative approach with Aberdeen, Dundee, Perth, and Stirling. Upon expiration of the open data platform licence in 2020, The Highland Council (THC) made the business decision to port the open data sets to the council's [open spatial data platform](#) – an approach subsequently adopted by other Scottish cities (see article on page 18).

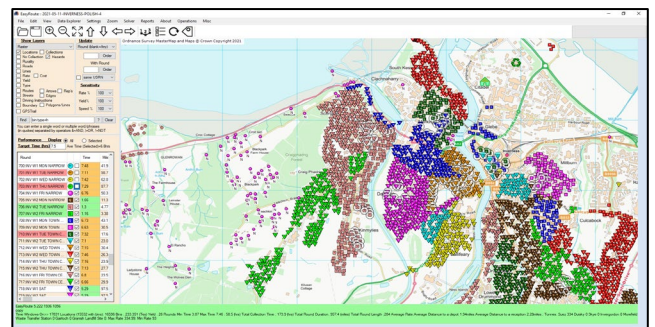
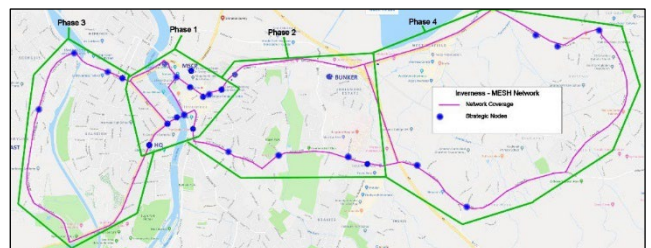
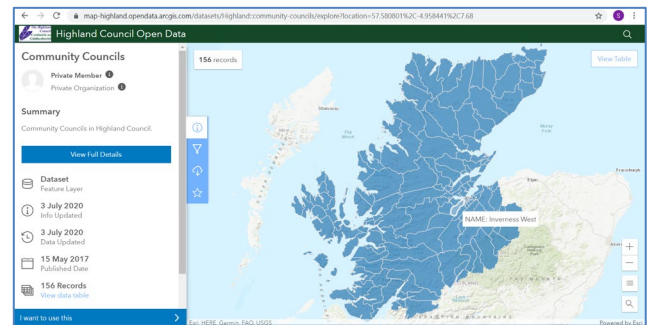
The Open Data project completed in December 2020 and produced 1 Innovative Service and 9 Dataset outputs.

The **Smart Mobility** project incorporated a number of sub-projects delivered via a partnership between THC and HITRANS. The central element of the project is a scalable and flexible wireless mesh infrastructure that forms the backbone for future digital city services, including Intelligent Transport Systems (ITS) solutions – see [case study](#).

Other elements of the Smart Mobility project include: smart bus stops; smart parking; the Fair Exchange operating system on the Far North rail line; Real Time Passenger Information (RTPI); and VMS infrastructure.

The Smart Mobility project was completed in December 2021, Outputs across the above noted sub-projects are under review.

The Inverness **Smart Waste** project had as its primary highlight/innovation the procurement of Route Software, which allows for the development of optimised waste collection routes. See [case study](#) for further information. The project completed in March 2021 and delivered 1 Innovative Service and 15 Datasets.



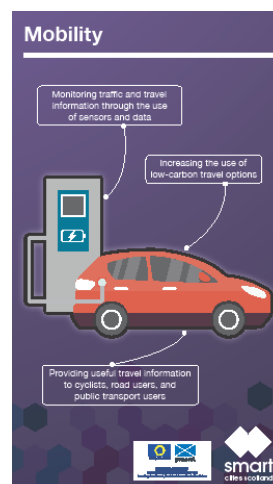
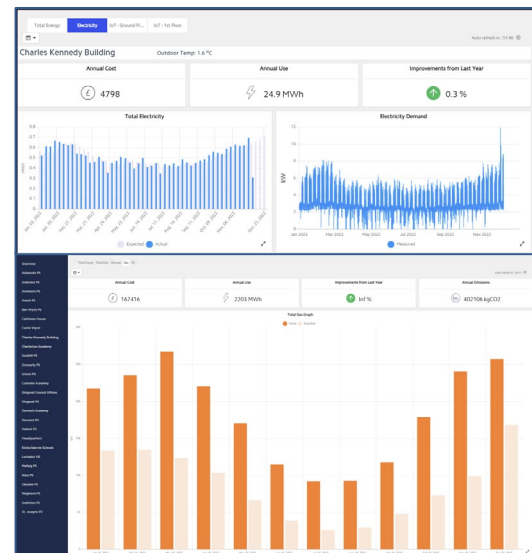
8th City Programme - Phase 2: Inverness delivered a further two projects in Phase 2.

Smart Mobility continued to be an area of project activity and, for Phase 2, extended the focus to Variable Messaging Systems and Real Time Passenger Information (RTPI) linked to travel routes to ferry terminals.

The **Smarter Buildings** project was proposed as one of a portfolio of four smart infrastructure/IoT projects. However, the impact of Covid-19 and the availability of alternative (and more relevant) funding sources meant that these were subsequently descoped from the ERDF programme.

The Smart Buildings activity has enabled deployment of sensors and monitoring dashboard across a significant proportion of The Highland Council buildings estate. This will more effectively monitor energy usage as part of a buildings management framework.

Both of the above projects completed in June 2023 with the reporting of outputs currently in progress.



Perth Projects Overview:

8th City Programme - Phase 1: Perth delivered six projects in Phase 1.

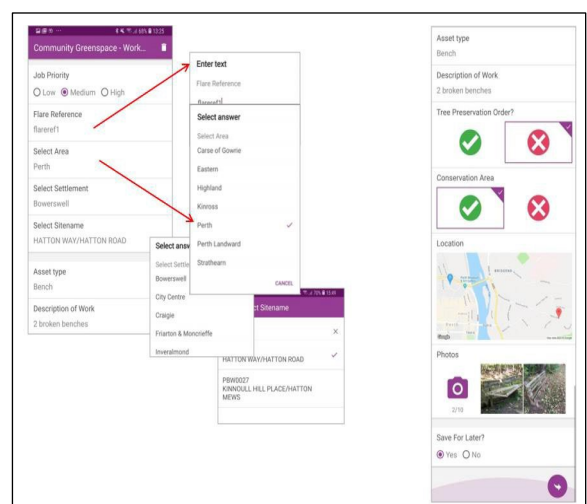
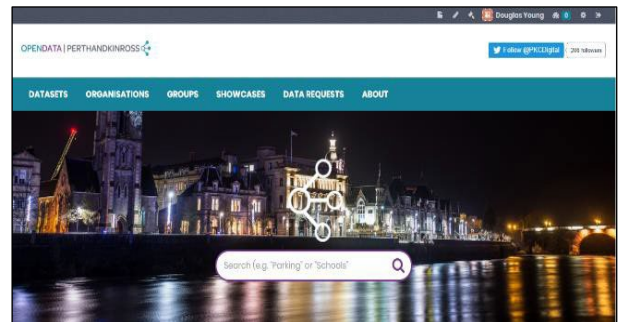
For the **Open Data** project, the Innovative Service output was the development of an [Open Data Platform](#), procured as part of a collaborative approach with Aberdeen, Dundee, Inverness, and Stirling.

Perth hosted the 'Innovating with Data across the Public Sector' conference during DataFest2020; this event was held at the Innovation Lab, an 8th City ERDF-supported project nested within the Perth Creative Exchange development. The Open Data project was completed in December 2019 and produced 1 Innovative Service and 43 Dataset outputs.

The **Intelligent Street Lighting (ISL)** project deployed LED lamps with central management systems and network controls to achieve efficiency savings of around 70%; this significantly reduces PKC's energy costs and supports a reduction in CO2 emissions. ISL also creates opportunities for the deployment of sensors and data collection as integral support for city ambitions to deploy IoT-led Smart City solutions. The ISL project was completed in December 2018 and produced 1 Innovative Service and 4 Dataset outputs.

Perth's **Mobile Working** project led to the development of a number of innovative services arising from the deployment of app-based mobile working. This has led to significant benefits for council officers and for the users of those services.

The project was completed in December 2019 and produced 7 Innovative Services and 2 Dataset outputs.



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Working alongside Dundee, Edinburgh, Glasgow, Inverness, and Stirling, Waste Officers in Perth deployed a range of **Smart Waste** approaches including bin sensors to enable responsive and more efficient collection. This means less waste going to landfill and fewer journeys made due to data-led routing and scheduling of collection services. Smart Waste Officers in Perth also sought to tackle issues around fly-tipping – see [case study](#).

The Smart Waste (Phase 1) project was completed in June 2019 and produced 3 Innovative Services and 3 Dataset outputs.



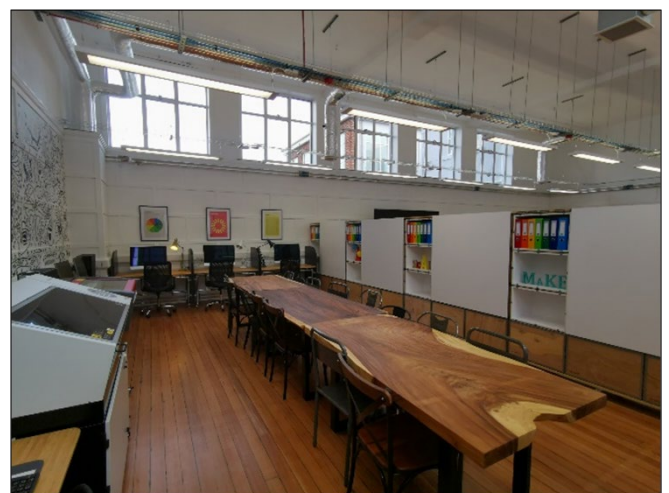
The Perth **Public Safety** project has been developed and delivered in partnership with Dundee (and with Angus Council as a non-8th City programme partner). The cities working together have combined resources and learning to work on a Tayside approach to delivering an integrated public safety network.

The introduction of enhanced public space CCTV and video analytics capability is playing a key role in integrating the work of partners all playing a role in tackling crime and disorder and promoting community safety.

The Perth Public Safety project was completed in December 2021 and produced 1 Innovative Service output. Dataset outputs for the project are currently being reviewed.



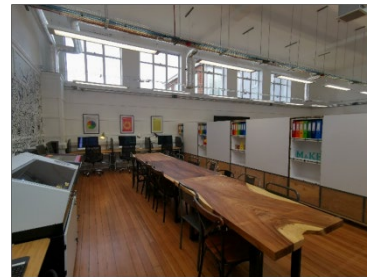
The Perth **Innovation Lab** is nested within the Creative Exchange development led by Perth & Kinross Council and WASPS (Workshops and Artists Studio Provision Scotland) and which opened in February 2020.



The Innovation Lab offers a space for stakeholders to work on urban challenges and to prototype smart city solutions using multiple approaches, activities and tools. The focus is on combining data and digital technology to support the development of new products and services helping to tackle city challenges.

The Innovation Lab subsequently secured local funding and was re-branded as The Famous Grouse Ideas Centre. The wider Perth Creative Exchange won the Regeneration Project of the Year at the Scottish Property Awards 2021. See Innovation Lab [case study](#).

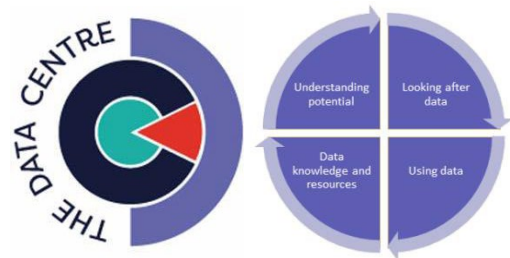
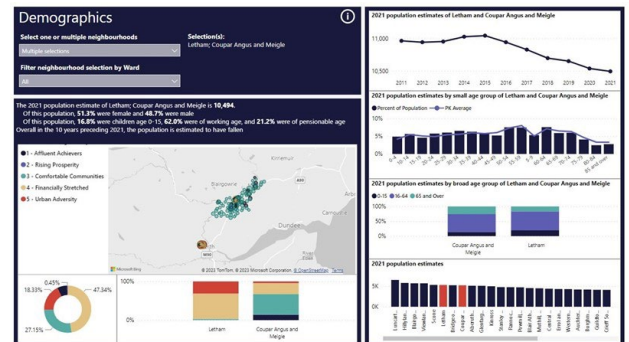
The project was completed in December 2019 and has produced 1 Innovative Service and 2 Dataset outputs.



8th City Programme - Phase 2: Perth delivered two projects in Phase 2.

Open Data activity continued into Phase 2 of the 8th City programme and Perth, in common with Dundee and Glasgow, has developed extensive data analytics capability across PKC services and wider partners. Data literacy has been a strong feature of this work, as evidenced in this [case study](#).

The Data project completed in June 2023 with work on track to achieve output targets of 4 Innovative Services and 20 Datasets.



Perth also continued with **Smart Waste** project activity from Phase 1 to Phase 2 with ongoing work to integrate new technologies and data to transform the way in which the Council provides waste and street sweeping services.

The Smart Waste project completed in June 2023 with work underway on identifying and reporting against output targets.



Stirling Projects Overview:

8th City Programme - Phase 1: Stirling delivered four projects in Phase 1.

For the **Open Data** project, the Innovative Service output was the development of an open data platform, procured as part of a collaborative approach with Aberdeen, Dundee, Inverness, and Perth.

In April 2023 the datasets listed on the open data platform were ported to the Stirling Council ArcGIS [Open Spatial Data platform](#).

The Data project completed in March 2019 and delivered 1 Innovative Service and 8 Dataset outputs.

The **Smart Energy** project enabled Stirling Council to deploy energy dashboards to track and monitor energy demand, carbon emissions and renewables performance across 30 key Council sites. See [case study](#) for project overview.

Learning from the development of this project was shared with officers at The Highland Council during the planning stage for the THC Smarter Buildings project delivered as part of Phase 2 of the 8th City programme.

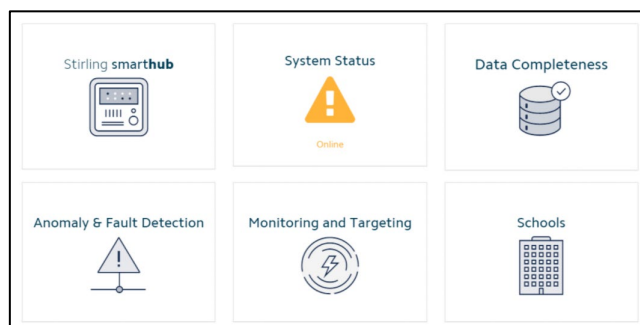
The Energy project completed in June 2019 and delivered 1 Innovative Service and 1 Dataset.

Stirling's **Smart Mobility** project deployed sensor-based monitoring of a range of travel modes – including vehicles, cyclists, and pedestrians. This vehicle monitoring infrastructure helps to make travel more efficient. Feeds from these monitoring devices are included as open data sets on the Stirling Open Data platform.

The project completed in December 2018 and delivered 3 Innovative Services and 3 Datasets.



OPENDATA | STIRLING



The Stirling **Smart Waste** project included a network of city centre solar-powered compactor bins. The project was delivered as part of a wider ERDF Operation involving Dundee, Edinburgh, Glasgow, Inverness, and Perth.

The Smart Waste project completed in December 2018 and delivered 1 Innovative Service and 1 Dataset outputs.

8th City Programme - Phase 2: Stirling delivered one project in Phase 2.

Alongside Dundee, Glasgow, and Perth, the Stirling **Open Data** project activity was continued into Phase 2. This work include an expansion of datasets available for open access.

The Stirling Open Data project completed in March 2022 and has delivered 30 Dataset outputs.



Looking beyond the 8th City programme, cities and programme partners will seek to sustain and further develop their smart city ambitions.

The collaborations and joint working developed via the programme provides a strong platform for sharing learning, knowledge and resources as cities seek to identify further opportunities building on from the 8th City programme's ethos of 'one city is all the cities'. This important collaboration of local authorities working together was highlighted as a significant achievement in the Scottish Government-funded interim review of the 8th City programme in 2019/20.

The 8th City programme governance and reporting activity was also recognised in 2021/22 when the programme was short-listed for the 'Governance and Economy' category of the annual World Smart City Awards 2021, a prestigious international competition and with entries submitted from almost 50 countries.

For more information about the 8th City programme, or about any of the individual projects delivered by city partners and Delivery Agents, please contact the 8th City Programme Management Office at 8th_City_PMO@glasgow.gov.uk.

Programme newsletters and case studies are at <https://scottishcities.org.uk/smart-cities/>.

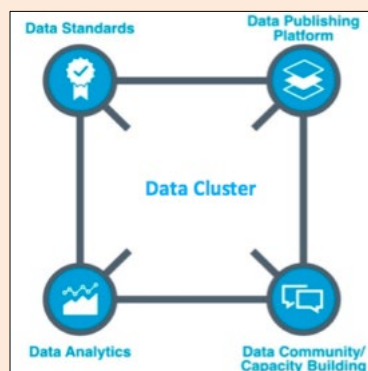
18 | 8TH CITY PROGRAMME: OPEN AND SPATIAL DATA DEVELOPMENTS

In 2015, data and digital technology were identified as core elements of the 8th City ERDF programme – with an initial focus on Open Data and Data Analytics activity.

This led to five cities (Aberdeen, Dundee, Inverness, Perth, and Stirling) submitting proposals for ERDF grant to support the development of Open Data platforms as part of a structured, collaborative approach to sourcing and making available a wide range of open datasets

The cities also agreed that data officers, many funded with the support of ERDF, would meet regularly as the Data Cluster Steering Group – with Scottish Government data representatives also invited to the group. The Data Cluster agreed the following four work packages to support the delivery of open data activity:

- WP1: Data Standards
- WP2: Data Platforms
- WP3: Data Analytics
- WP4: Capacity Building



With open data at the heart of the programme, and all cities committed to the development of open data platforms to make datasets easily available for wider public access, the cities delivered this via a mix of CKAN open-source open data portals and ArcGIS mapping & analytics platforms.

The CKAN (Comprehensive Knowledge Archive Network) platforms delivered by Aberdeen, Dundee, Inverness, Perth, and Stirling in Phase One of the 8th City programme, were ERDF-supported to complement Esri/ArcGIS platforms operated by Edinburgh and Glasgow.

CKAN is an open-source data management system (DMS) for powering data hubs and data portals and is recognised as making it easy to publish, share and use data. ArcGIS provides contextual tools for mapping and spatial reasoning and, at the close of the 8th City programme in June 2023, Scottish cities continue to use a blended mix of CKAN and ArcGIS-supported open data platforms.

There are currently almost 540 data sets made available across open data platforms for the seven cities engaged in the Scotland's 8th City programme. The primary platforms for each of the seven cities participating in the programme are noted as follows:

CITY	OPEN DATA PLATFORM URL
Aberdeen	https://spatialdata-accabdn.opendata.arcgis.com/
Dundee	https://data.dundee.gov.uk/ and also https://dundeecity.maps.arcgis.com/home/index.html
Edinburgh	https://data.edinburghcouncilmaps.info/
Glasgow	https://data.glasgow.gov.uk/
Inverness	https://map-highland.opendata.arcgis.com/
Perth	https://data.pkc.gov.uk/
Stirling	https://data.stirling.gov.uk/

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In recent years, however, there has been a shift towards the development of open spatial data; this complements wider work undertaken by the Improvement Service to develop the Spatial Hub on behalf of all 32 Scottish local authorities.

The Spatial Hub (www.spatialhub.scot) is an online resource that provides a single point of access to quality-assured Scottish local authority data, in a consistent format. Launched in 2016, it is developed, operated and managed by the [Spatial Information Service](#) (SIS). The Spatial Hub includes data themes such as planning, administrative boundaries, environmental, transport and community facilities.

Provision of the Spatial Hub benefits local authorities by saving time, money and effort in preparing and publishing key data sets and helps to expose data to a larger audience, which increases the value of the data itself.



Also working across and on behalf of all 32 Scottish local authorities, the [Digital Office for Scottish Local Government](#) aims to be a centre of excellence in data, technology and digital. The Digital Office [newsletter](#) of June 2023 notes that digitally mature councils will use data and insights effectively to increase understanding and drive efficiencies throughout services.

In taking note of the recent Audit Scotland report which stated that *“many councils are at an early stage of understanding how data can be better used to inform decisions, and understand user and community needs to achieve better outcomes”* the Digital Office has recently refreshed their Data Delivery Model – further information [here](#).

Returning to the open (spatial) data platforms provided by Scottish cities and by the Spatial Data Hub, it should be noted that each offer benefits to wider society by enabling access to consistent national datasets of local government data which can be used for various purposes. In turn, these resources offer potential for innovation and new business ideas, that could ultimately help improve public services and communities.

This latter benefit is entirely consistent with a key output indicator for the Scotland’s 8th City – the Smart City ERDF programme, namely the delivery of ‘Datasets Opened for Innovation’. There has been a focus on these outputs across the programme and it is anticipated that outputs will be achieved by the end of September 2023 - when all project reporting is required to be completed.

In setting the scope for the ‘Datasets Opened for Innovation’ output (prior to the 8th City programme commencement in 2015) Scottish Government highlighted the importance and potential value of open data as part of economic development, social innovation, and investment ecosystems.

A recent (29th June 2023) presentation by Martin Macfie, Louise Meikleham, and Jack Lord on ‘Data’s role as a driver for Open Government’ highlighted how this has been complemented by the Scottish Government Data Division’s focus on enabling Scotland’s public sector through data; there are six priority outcomes for this work, including the following:

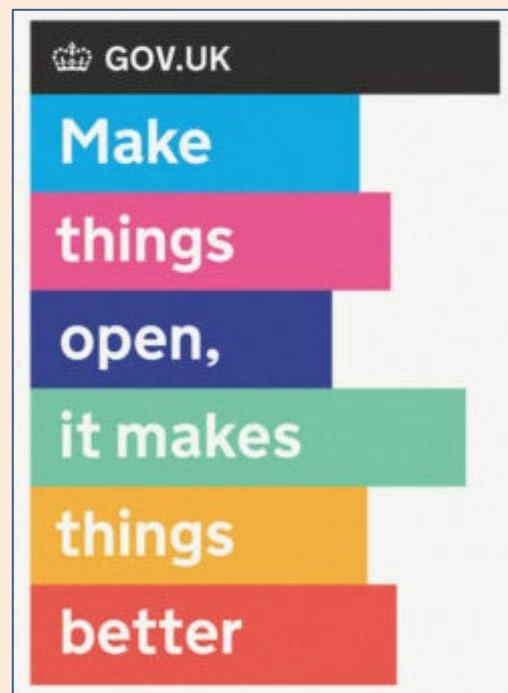
- Improving the quality and accessibility of data;
- Developing an innovative data culture;
- Enabling safe and appropriate data sharing; and
- Improving public trust in data collection and use.

The strategic value of this activity is summarised as: “A more collaborative, innovative, transparent, and responsive public sector will support Scotland to offer opportunities for all to flourish through increased wellbeing, and sustainable and inclusive economic growth.”

Scotland’s Open Government action plan 2021 to 2025, available [here](#), is Scotland’s third national action plan as a member of the [Open Government Partnership](#).

Within this open data landscape, the increasing focus on geospatial data should also be viewed in the context of the Open Data Institute’s (ODI) report on the outcomes of the INSPIRE Regulations 2009 review. Released in July 2023, this report assesses the extent to which the INSPIRE Regulations have achieved the objectives of improving how geospatial data is made findable, accessible, interoperable and reusable (referred to as FAIR data) for enabling environmental reporting, policymaking and evaluation, through means of a spatial data infrastructure.

The report assesses the extent to which INSPIRE has achieved its objectives, and makes recommendations for INSPIRE’s future in the UK policy context.



The ODI report on INSPIRE is essential reading for cities seeking to engage more with open geospatial data development and is available [here](#).

Stephen Birrell, Programme Officer, 8th City PMO



What challenge(s) does the Use Case address:

Dundee City Council (DCC) has ambitious plans to ensure the city achieves net-zero Greenhouse Gas emissions by 2045 or sooner, and the city's [Climate Action Plan](#) identifies four themes of Energy, Transport, Waste and Resilience. As part of this ambition, DCC recognises the potential for electric vehicles (EVs) to support reduced pollution from road traffic and improve air quality.

Dundee is a small and compact city which makes it well-suited to widespread EV use – there is a maximum drive of 20 minutes between points in the city. It is also regarded as Scotland's leading city in the adoption, promotion, and operation of EV and was awarded the accolade of Europe's most visionary city for electric vehicles by the World Electric Vehicle Association.



How did you Solve the challenge:

Via its involvement with the 8th City ERDF programme, Dundee has explored opportunities for increased use of shared vehicles and low carbon travel options. This included the ShareMORE (Mobile Resource Efficiency) Mobility-as-a-Service pilots delivered in Phase 1 of the 8th City programme, and a Phase 2 project which both expanded EV charging infrastructure options - in advance of the implementation of a Low Emission Zone in 2024 - and addressed issues around accessibility of EV charging infrastructure.

The Phase 2 Smart Mobility project expands EV charging capacity to four hubs spread across the city and also continues the innovative solar-powered and battery storage system approach. One of the sites, the Clepington Road EV Charging Oasis, has been Dundee's first opportunity to bring to life their investigations into the accessibility and equity of charging.

Launched in April 2023, the Oasis consists of 4 x 50kW and 1 x 150kW charging units, accessible bays, renewable drinking water solution, solar canopies and a shared battery storage set up. DCC recognised that the lack of formal guidance and regulations for EV charging infrastructure - with a variety of different charge points and equipment, multiple manufacturers, and investors, each with their own charge initiation and payment models, made accessing EV charge points challenging for many user groups.



Dundee's new 'Charging Oasis' is the starting point for other landowners and installers to aspire to and hopefully improve on as awareness of accessibility and inclusivity grows. The Clepington Road site delivers the following:

- A hub in a busy, central location with wheelchair access to and from the site and is within wheeling distance to local facilities.
- Signage that is consistent with other EV charging hubs across Dundee. A large entrance sign is at the driver's eye level with clear directional signposting. Additional signposting for the pedestrian exit will also be provided.
- The site is well-lit at all times, and shelter is provided via the overhead canopies for the majority of the charging process (see Lessons Learned section of case study for further info).
- There is a minimum of 1100mm between charge points and vehicles, with most spaces having 1200mm. A carefully considered wheel stop prevents vehicles from encroaching on this space and provides a safe space for manoeuvring in front of the charge point.
- All bays are 2400mm by 5000mm with 1200mm hatching around each one.
- All bollards, kerbs and plinths have been removed, enabling level access to charge points from bays, as well as access to and from the site.
- Street furniture has been minimised, with no obstacles in the near vicinity of charge points or on access routes to the exit.
- All surfaces are tarmac with appropriate drainage.
- Cables are supported by the manufacturers cable management system, longer cables of 5.2m have been provided to allow for WAV vehicles, and cables have reflective yellow sleeves that contrast with the hard surfaces.
- Heights of connectors comply with current IET regulations.



Lessons learned and advice to other cities for replication:

Key learning includes the following points:

- Capital projects almost always take longer to complete than expected.
- Infrastructure projects can have wider unknowns (e.g. contaminated land issue).
- A compromise was required regarding the preference for vehicles to be entirely sheltered, however, this meant that the space around the charge points would be reduced and that access for WAV vehicles could be impacted. The decision was therefore made that cover for access to the charge points was the priority.
- Good and long-term working relationships among the wider project team (i.e. between the council and its contractors) is key to good planning, design and delivery, and helps ensure that lessons are continually learned.
- It is important not to make assumptions at the planning and design stage; it was decided to ensure that the existing evidence base regarding accessibility for disabled people was reviewed alongside ongoing engagement with key third sector organisations.

Dundee City Council intend that the Phase 2 Smart Mobility project will become a positive case study for other local authorities in terms of fully accessibly charging infrastructure and the use of solar power and battery storage.

Impact:

Alongside this revolutionary EV installation, Dundee City Council also embarked on a major depot charging installation project on the same site at the same time. Once complete, the Environment Depot at Clepington Road will have 21 x 7kW chargers, 1 x 100kW and 2 x 50Kw to support over 200 electric vehicles. The plan is to install solar canopies that will cover the spaces and offer protection. The solar generated will produce 140kWp and feed into a shared battery storage located next to the public charging hub. Dundee City Council have removed all the fuel tanks and contaminated land, on the depot side which further highlights the pledge to move to electric.

Installation of solar infrastructure at the main garage at the Marchbanks depot where battery storage is connected to EV charge points to help support the council's electric fleet of cars and vans and workshop amenities. 343 PV modules which equates to 118.34kWp DC power has been installed on the roof of the main workshop. This equivalent to 1,229 trees being planted.

In July 2023 the Clepington Road EV Charging Oasis was short-listed for the Best Practice in Diversity, Inclusivity and Accessibility category at the National Transport Awards 2023 – with the winner to be announced in October.



Emma West, Low Carbon Project Manager, Dundee City Council: emma.west@dundeecity.gov.uk

24 | SMART CITIES SHARING THE LEARNING – 8TH CITY CASE STUDIES

In applying for European Regional Development Funds (ERDF) in 2015 to support the establishment of the 'Scotland's 8th City – the Smart City' programme, there was a clear statement of purpose, agreed by all the cities, that the programme would be collaborative rather than a challenge fund. This required approaches to be open, scalable, replicable, and inter-operable.

The cities and project lead officers also made a strong commitment to mutual support, knowledge exchange, and the sharing of experiences and learning. This approach was highlighted in Scottish Government Operational Programme guidance which stated that:

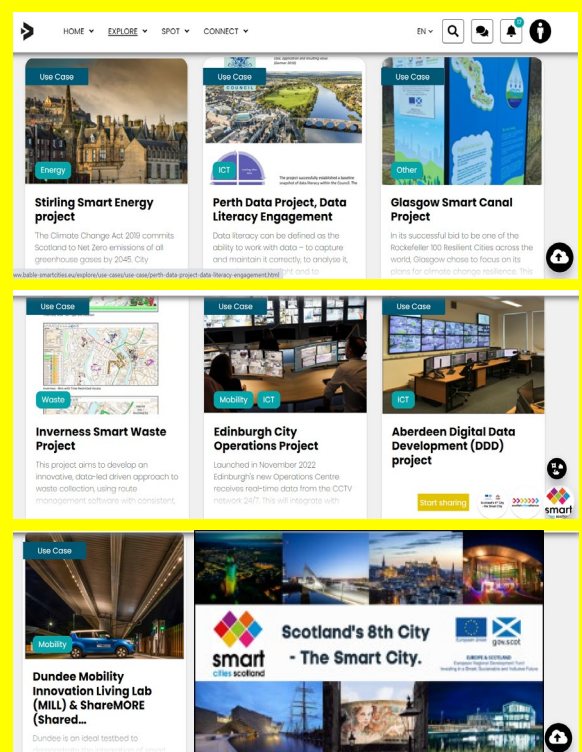
“The cities working together means that, from inception, new systems are designed to operate between cities and for all cities, enabling connectivity and offering investors an entry point to a collection of cities which are collectively at global scale and skills levels – any city is all the Cities.

The ambition is to make a step change in the use of smart technology for integrated city management not just individually but collectively, so creating the 8th City.”

By working together over the past eight years via the 8th City programme, Scotland's cities have sought to become more attractive, liveable and resilient through data and digital technology. The aim has been to expand Smart City capabilities and deliver city priorities through improved community engagement, integration of service delivery, and innovation.

An important element of this collaborative and collective approach has been the production of case studies. The 8th City programme has delivered 40 separate projects across Phase 1 and Phase 2, with activity structured around a range of themed Smart City domains – such as Open Data and Data Analytics, Energy, Mobility, Public Safety, Water Management, Smart infrastructure / Internet of Things (IoT), and Smart Waste.

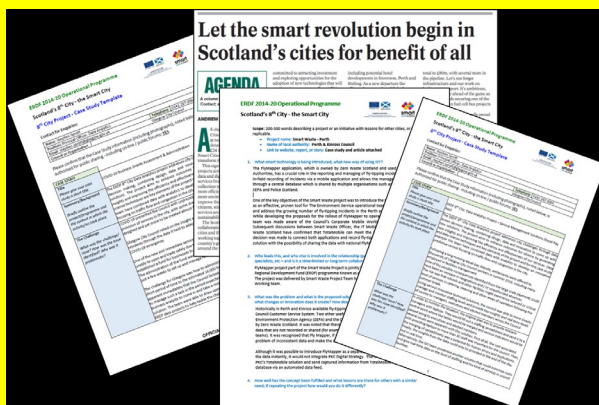
Case studies are intended to be useful at both the project level and also as part of the wider Smart City theme or Operation. Specific learning can result from individual project delivery and outcomes – especially in relation to challenges, processes, solutions, etc.



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However, it is also the case that a more general applicability can be derived in relation to approaches pertaining to the Smart City themes – for example the use of Mobility-as-a-Service (MaaS) initiatives within Smart Mobility, the insight generated by Data Analytics activity, or the values of Open Government, transparency and accountability within Open Data projects.

There are currently almost 80 case studies available across the 8th City programme – with some projects producing a variety of case studies encompassing different aspects of project development and delivery; for example, the Glasgow Data Analytics project has produced ten case studies covering a range of processes (e.g. data matching, data modelling, design-led thinking, etc.) as well as different applications and uses of data analytics (e.g. traffic management, public space CCTV, child poverty, and Covid-19 responses). Also, a number of projects have produced alternate versions of case study, encompassing both a high level and a detailed version.



8th City project case studies have been featured in the following publications and initiatives:

- ESIF 2014-2020 Programmes in Scotland - annual reports 2021 and 2022
- DataFest 2020
- Institute of Civil Engineers (Scotland) annual report 2020
- Council of Europe Congress of Local and Regional Authorities 2019
- SOCITM website
- Local Government Information Unit (LGIU)
- Europe Day 2018 ESIF annual report

8th City case studies have been presented at events and webinars such as: Citiscap Scotland / Quadrant Smart (2020); DataFest Fringe 'Innovating with Data across the Public Sector' (2020); Smart Cities UK 'Meeting City Challenges' (2019); and others.

In recent months, programme partners have worked to develop and extend access to 8th City case studies online via the Scottish Cities Alliance website, where 20 case studies are currently featured, and via the BABLE Smart Cities Platform where 22 case studies have been submitted under the Smart Cities Scotland banner.

It is intended to share further case studies via BABLE and for Scottish cities to use the platform for sharing other aspects of their Digital, Smart, and Sustainability ambitions. Currently, Aberdeen, Glasgow, and Perth have a presence on the platform.

To find out more about the 8th City programme case studies please contact:

Stephen Birrell, Programme Officer, 8th City PMO - stephen.birrell@glasgow.gov.uk

A Performance Measurement Framework for reporting on project and programme performance was approved by 8th City partners in 2019. This included a section on information that might be used as ‘indicators’ of success - including evidence of Smart City awards. Accordingly, the 8th City PMO has sought to promote awards opportunities on the basis of projects, operations, cities, and the wider collaborative programme.

With programme closure taking place on 30th September, it is a good time to look at the awards and accolades that 8th City programme partners have garnered over recent years:

The Glasgow Smart Canal project was one of the Smart Infrastructure projects delivered in Phase 1 of the 8th City programme. Working via the Metropolitan Glasgow Strategic Drainage Partnership (MGSDP), project partners – including Glasgow City Council, Scottish Canals, and Scottish Water – secured six major industry awards in 2021 in recognition of the Smart Canal’s innovation, delivery and impact. These awards include:

- ‘Initiative of the Year’ and ‘Industry Transformation & Innovation Champions’ at the *British Construction Industry Awards*.
- ‘Greatest Contribution to Scotland’ at the *Scottish Civil Engineering Awards*.
- ‘Best Innovation/Demand Management Initiative’ (*APSE Public Service Excellence Awards*).
- ‘Sustainable Drainage & Flood Management Initiative of the Year’ (*Water Industry Awards*).

In November 2022 the Smart Canal project was selected by the Institution of Civil Engineers (ICE) as one of three global examples of sustainable development, with infrastructure project in Chile and India also highlighted alongside Scotland at the ICE international AGM.

Another smart infrastructure project, the Famous Grouse Ideas Centre, was an integral element within the Perth Creative Exchange which won the Regeneration Project of the Year award at the Scottish Property Awards 2021. Perth Creative Exchange is a £4.5M creative hub to boost the Perthshire arts economy and was officially opened in February 2020.

The ‘Scotland’s 8th City –the Smart City’ ERDF programme was short-listed as one of three finalists for the ‘Governance and Economy’ category of the annual World Smart City Awards 2021 - a prestigious international competition that seeks to recognize pioneering projects, ideas and strategies making cities around the world more livable, sustainable, and economically viable. Entries for the 2021 awards came from almost 50 countries worldwide and were noted as being “of an exceptionally high standard”. After a highly competitive selection process, World Economic Forum’s G20 Global Smart Cities Alliance was announced as the winner at the Smart City Expo World Congress in Barcelona.

8th City programme and project activity was also short-listed for the following awards:

- Digital Leaders 100 Awards 2022 and 2023
- LGC Awards 2022 and 2023
- Digital Leaders Net Zero Top 50 Awards 2022
- National Transport Awards 2023 (*winners to be announced October 2023*)

Although not winners at the above awards, the 8th City nominations were very well received with positive feedback and recognition given to this ambitious and sustained partnership.

Thanks again to all 8th City partners who have committed to the ongoing vision and implementation of a collaborative programme of Smart City activity and engagement.



European Cities and Regions of the Future 2024

Could your location be fDi’s European city or region of the future? In February 2024, fDi Intelligence will publish the ‘European Cities and Regions of the Future 2024’ ranking, which benchmarks European cities and regions according to economic, financial, and business strengths.

Closing date for submissions is 15th September 2023. More info at [fDi](#).

Secure Your Organisation: A Guide to Proactive Cyber Security Planning

The recent large-scale data breach of Northern Ireland Police proves that cyber threats pose a significant risk. To safeguard sensitive data and financial stability, it's crucial to start planning and developing a robust cyber security strategy.

Follow these six essential steps to ensure comprehensive protection:

- Audit Assets, Network, and Data
- Run a Full Vulnerability Scan
- Prioritise Data and Resources
- Patching and Remediation
- Implement Endpoint Detection and 24/7 Monitoring
- Continually Train and Empower Employees

A quick guide to Cyber Security Planning is available via [WiredGov](#).

PREPARING FOR PROGRAMME CLOSURE: BEST PRACTICE GUIDE AND KEY DEADLINES

At the end of 2022 the Managing Authority published [‘preparing for closure – best practice guide and key deadlines’](#).

Key remaining deadline dates* are noted below:

- | | |
|--|------------|
| ▪ Final physical end date: | 30/09/2023 |
| ▪ Final financial end date: | 31/12/2023 |
| ▪ Final claim submission (4th and final deadline): | 31/01/2024 |
| ▪ Final article 125(5)(b) OTS (Stage 2) visits: | 31/05/2024 |
| ▪ Final article 127: | 31/10/2024 |
| ▪ Final reporting on EUMIS: | 31/03/2024 |
| ▪ Final payments: | 20/06/2024 |

*Please note that some 8th City Programme key closure dates differ from those outlined above. Key dates for 8th City projects are as follows:

- Physical completion of all projects: 30th June 2023
- Submission of project closure reports and recording / reporting of all outputs: 30th Sept 2023
- Penultimate claim submission: 19th June 2023
- Final Claim submission: 19th December 2023