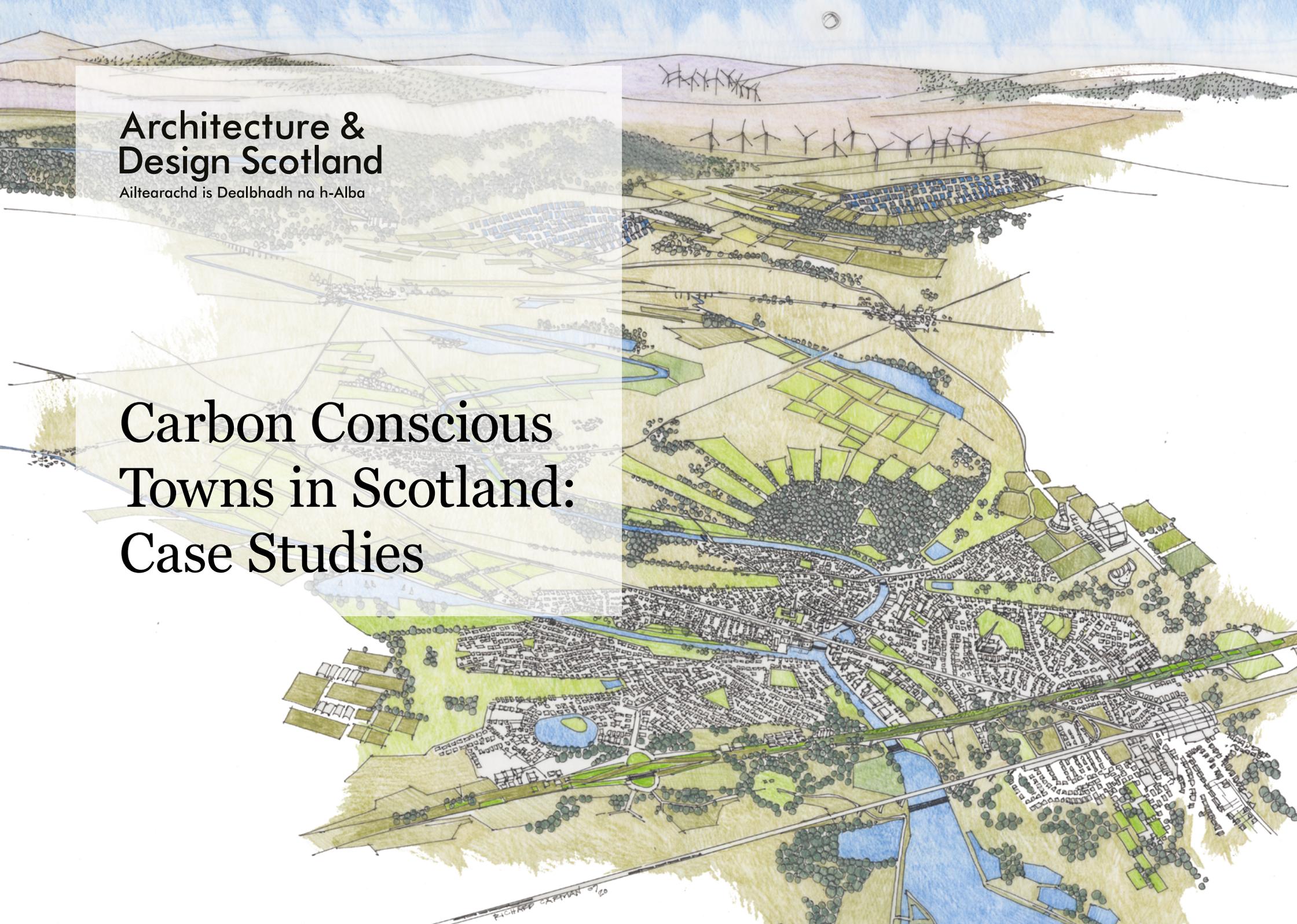


Architecture & Design Scotland

Ailtearachd is Dealbhadh na h-Alba

Carbon Conscious Towns in Scotland: Case Studies



Designing for a Changing Climate: Carbon Conscious Places

Architecture and Design Scotland (A&DS), as Scotland's design champion, recognises that how we design, plan and deliver places has a significant impact on Scotland's abilities to respond to: the impacts of climate change; The Climate Change (Scotland) Act's carbon emissions reduction targets; and health inequalities.

In 2019 A&DS established a programme to assist public sector organisations to take a place-based approach to designing for the changing climate, supported by the Energy and Climate Change Directorate of the Scottish Government. Through this work, A&DS has been able to work with place-based projects to champion a whole place approach to considering the net-zero carbon challenge and the implementation of the Place Principle.

The pilot work focuses on four scales of place across Scotland – an urban neighbourhood, a city centre, a town and a rural community. Our engagement with and findings from the projects and stakeholders informed the creation of the 8 Principles of a Carbon Conscious Place. Our [Designing for a Changing Climate: Carbon Conscious Places report](#) illustrates what Scotland could look like in 2050 if we work together to reduce, repurpose, and absorb carbon, adapt to the impacts of climate change and deliver on the United Nations Sustainable Development Goals.

Spatial planning was identified as a priority by the Government because it helps to set long-term visions for a place and guides the decisions around a range of aspects such as movement, housing, landscape, and economic centres. It therefore plays a key role in influencing all scopes of carbon emissions. These Case Studies build on the theoretical work of the Designing for a Changing Climate pilot, identifying communities across Scotland already working to deliver on the 8 Principles of a Carbon Conscious Place. While these are not definitive examples they are being highlighted for their variety in approach, collaboration, innovation and diverse locations.

The narrative, and the accompanying illustrations, are designed to inspire others, to provide some insight into the approaches currently being undertaken and a visual glimpse of the possible outcomes.

Carbon Conscious Towns

Over 50% of Scotland's population live in our towns, it is therefore key that their Local Authorities and communities are empowered to respond and adapt to the impacts of climate change. However, every town has its own unique set of circumstances, demographics and geography so there is no one-size-fits all approach for adapting to Climate Change.

The Climate Change Committee estimates that more than 60% of emissions reductions to meet net zero will need to come from societal change. Therefore, public buy-in and behaviour change is key to successful climate action. Our towns need to address and act on a number of complex issues, including reducing and balancing carbon emissions associated with our heat and energy, support significant behaviour change to tackle the emission associated with all other aspects of our daily lives, and adapt to the risk and impacts of climate change.

In these Case Studies we focus on two Scottish towns working to tackle those complex issues: one a former market town in the South West of Scotland; the other a former industrial centre on the East coast. In Dumfries, a number of grass roots community and third sector led initiatives have given continued and new life to the town centre and The Crichton Care Campus, a multi-generational care village. While in Leven a strategic approach between a number of Key Agencies, led by the Scottish Environment Protection Agency (SEPA), has enabled action focused on the environmental improvement of and connectivity with the River Leven and its surrounding area.

Through our work at A&DS we have identified some of the challenges that many towns are currently facing, which including:

- Reliance on private transport and availability of and access to, affordable and reliable public transport
- Shifting purpose of town centres, including the reduction in footfall and increase of vacant units
- Demand and barriers to the repopulation of town centres
- Rebalancing the transport hierarchy and prioritising spaces for people
- Energy efficiency of existing building stock
- Identification and prioritisation of vacant and derelict sites
- Shifting electricity and heat production and demand
- Enabling empowerment of communities
- Balancing market led change with environmental, and social and economic sustainability
- Managing industrial decline
- Local food resilience
- Reconciling historic built assets with future uses
- Demographic shifts and population change
- Increasing flood risk



Dumfries

Dumfries is a town on the River Nith and the largest settlement in Dumfries and Galloway in the South West of Scotland. Dumfries has a population of 49,211 (2011) but with median ages of 47 for women and 49 for men it is documented that the area is home to an ageing population. A traditional market town, it is surrounded by a number of smaller settlements and serves a large rural region. Following the building of the Dumfries bypass in the 1980s uses such as retail, businesses, education, housing have moved towards the fringes of the town.

In the centre of Dumfries the Midsteeple Quarter is a community led initiative to bring people back to live and use the town centre. For years shop units in the town centre were occupied by national companies with upper floors left vacant, to the point that few people now live in the town centre. As chain stores began to pull out of Dumfries this left a void in the streetscape and opportunities for community led initiatives.

The vision for the Midsteeple Quarter grew out of five years of grass-roots consultation work by the Stove Network. Taking over a vacant shop unit in 2011 they facilitated discussions around the future of the town with the consensus gradually emerging that bringing people back to live in the town centre would be key to the economic and social future of Dumfries.

The Midsteeple Quarter Community Benefit Society was formed to take forward the development of one high street block, with flats to rent on the upper floors and community, cultural and commercial enterprises at ground level. They now own five high street properties.

Sitting to the south of Dumfries The Crichton is an 85 acre estate managed since 1996 by The Crichton Trust a charitable company. The site when bequeathed in 1823 was intended for the purpose of a university in Dumfries but proving unfeasible the site became home to a Crichton Royal Hospital which became an internationally recognised centre of excellence in mental health care. In 1995 the site was purchased by the local authority to ensure this asset was saved for the wider good of the community. The Crichton managed by the Crichton Trust is now home to academic institutions, hotels and businesses.

The Care Campus is an initiative that grew out of discussions at The Crichton which asked "What is the Crichton Trust's role in supporting an ageing population? And how can we make Dumfries and Galloway the best place to grow old?" The Crichton Care Campus has been identified as a place to provide for intergenerational living and full spectrum of needs.



“It’s a mixed vision of a town centre, it’s not just a retail centre: it’s a place of learning; it’s a place of culture; it’s a place of leisure; it’s a place of enterprise; it’s a place of service delivery; overall it’s a place for people”

Matt Baker, Midsteeples Quarter

1. A Place-Led Approach

The vision for the Midsteeples Quarter came from the grass roots - the result of five years of consultation work utilising a wide variety of methods. Engaging with a large proportion of the population, the Stove Network were able to identify a consensus that bringing a population back to live in the town centre would be key to the economic and social future of Dumfries. Creating a mixed vision for the town centre that locals want to live and be in, including looking at streets for play, The Midsteeples Quarter was established to build and deliver on this place-led vision.

The Crichton Care Campus is being developed using a place-led approach by engaging with the local community. By assessing and building on assets this project aims to go beyond just needs to local desires for the project.

The formation of Dumfries Partnership Action Group (DPAG) a collaboration of businesses, community organisations and social enterprises was led by Dumfries and Galloway Council when they identified that a strategic approach was required around the town centre. They are developing a 10 year action plan for Dumfries Town centre 'Dynamically Different Dumfries' through a series of workshops and engagements.

2. A Place of Small Distances

The premise of the Midsteeples Quarter is about bringing people back to live in the town centre - along with creating space for local businesses and shops. Creating destinations along with a viable population density allow a place of small distances to exist.

3. A Network of Small Distance Places

Accessibility is an issue in a rural area but the town centre is one area that is easy to get to. The Midsteeples Quarter is acting on the premise that investing essential services in easily accessible areas is key. If the town centre becomes the go-to place then it is much easier and more feasible to invest in transport networks. When the Stove Network did an event to put together a People's Transport Policy for Dumfries the conclusion was not to start with the transport, but actually to start making the place somewhere that people want to get to.

While The Crichton Trust is conscious of the large hill making active travel between Dumfries town centre and the campus tricky they are encouraging tenants to use low-carbon transport. Electric charging points are available onsite and to incentivise cycling the co-working space has been fitted with a shower as

well as a changing places toilet, with e-bike charging points in the bike shed.

4. A Place Designed for and with Local People

The Crichton Trust believes a place-led approach is key in developing their multi-generational care campus. They commissioned joint research with the Midsteeples Quarter into community housing ownership models. They have also collaborated to explore intergenerational housing models through the Care Campus project and both participated in a European Study visit led by The Crichton Trust in February 2020.

The Stove Network and Midsteeples Quarter believe consultation is critical and are keen to keep consulting with the local population to ensure ongoing effectiveness and relevance. Meanwhile spaces in community-owned buildings are used for engagement and consultation work, these are creative and accessible and offer local people the opportunity to take an active part in developing designs for Dumfries' future.

“Because the Crichton is the custodian of this this historical site it is very important that everything we do is of good quality, because ultimately we will be paying the bill - we are now looking at how we can build the circular economy into what we do”

Jeniffer Challinor, The Crichton

5. A Place that Reuses, Repurposes and Considers Whole Life Costs

The Crichton trust manages the assets of 27 Victorian Hospital buildings, 22 of which are listed. This can be a challenge when considering energy efficient refurbishment. As a long-term custodian of the buildings they understand that good quality work is important and are able to fully consider whole-life costs. They are currently looking at building in circular economy procurement as well as specifying local suppliers for any refurbishment or re-purposing work.

The Midsteeples Quarter currently owns five High Street properties and are negotiating on a further one. The previous owners have not invested in the properties which now have considerable levels of dilapidation. The first project comprises façade retention and construction with incubator spaces of new creative industries and social enterprises at ground floor and flats above.

6. A Place with Whole and Circular Systems

Dumfries is in a unique geothermal position and sits on a hot water reserve. Energy consultants have undertaken a feasibility study for a low temperature district heating system that could supply the Midsteeples Quarter. A similar proposal is exploring the opportunity for a district heating system to serve

the Crichton quarter.

The Crichton is home to 85 acres of parkland with a working farm as part of the estate. The trust is planning to re-build old glasshouses to aid food growing. They are also developing a waste to heat plant which will be used to heat the new co-working space. Adjacent to this is an old steam powered boiler house and the opportunity to use old pipe networks to distribute heat is being explored.

7. A Place that Supports Sharing

Sharing is integral to The Crichton's success, a campus retained for the benefit of the community and home to, and shared by academic institutions, Dumfries and Galloway Council, the NHS, and businesses. Building on this sharing ethos The Crichton Trust is now hosting tenants meetings allowing businesses on site to build sharing networks.

The Stove Network is a creative network which supports the sharing of resources and capacity. The Midsteeples Quarter is a community benefit society which means that all members are part owners in the project.

The Guild is a community benefit creative organisation, a network of local makers working together towards the community purchase of a

creative workspace. They also deliver Dumfries Market Festival a monthly street market working towards the regeneration of Dumfries Town Centre, activating the town centre as a destination and incorporating music, performances, dance, street theatre and workshops.

8. A Place Designed in Time

The Crichton Trust as a registered charity independently managing a large asset is in a unique position of being able to make and implement long term plans. The Crichton trust has a 30 year strategic plan which they work to, and which allows for them to bring items forward if the opportunity or funding arises. They are able to schedule maintenance work effectively. Taking the long view enables them to justify their focus on future issues such as technology, zero-carbon and an aging population.

For the Stove Network future visioning has been at the heart of community consultation from the start. Posing the question "what does the future of Dumfries look like" they then work to identify a shared approach. Consultation and future-casting have resulted on the focus of developing a local economy - a model of localised prosperity.

Leven

“We recognise the value in connecting people within the River Leven area and the opportunity this will create to revitalise land usage for community benefit”

Lee Oliver, Environment Manager, Diageo

The town of Leven, Fife, is located in the East Central Lowlands of Scotland and forms part of the Levenmouth conurbation, which comprises of a network of three principal coastal towns: Leven, Buckhaven and Methil, and a number of smaller inland settlements.

Leven lies on the coast of the Firth of Forth at the mouth of the River Leven, which flows from the freshwater Loch Leven. It gained popularity as a seaside tourist resort after the opening of the Leven Railway in 1854, and at the same time, coal mines were opening rapidly across the conurbation and the area experienced substantial population growth.

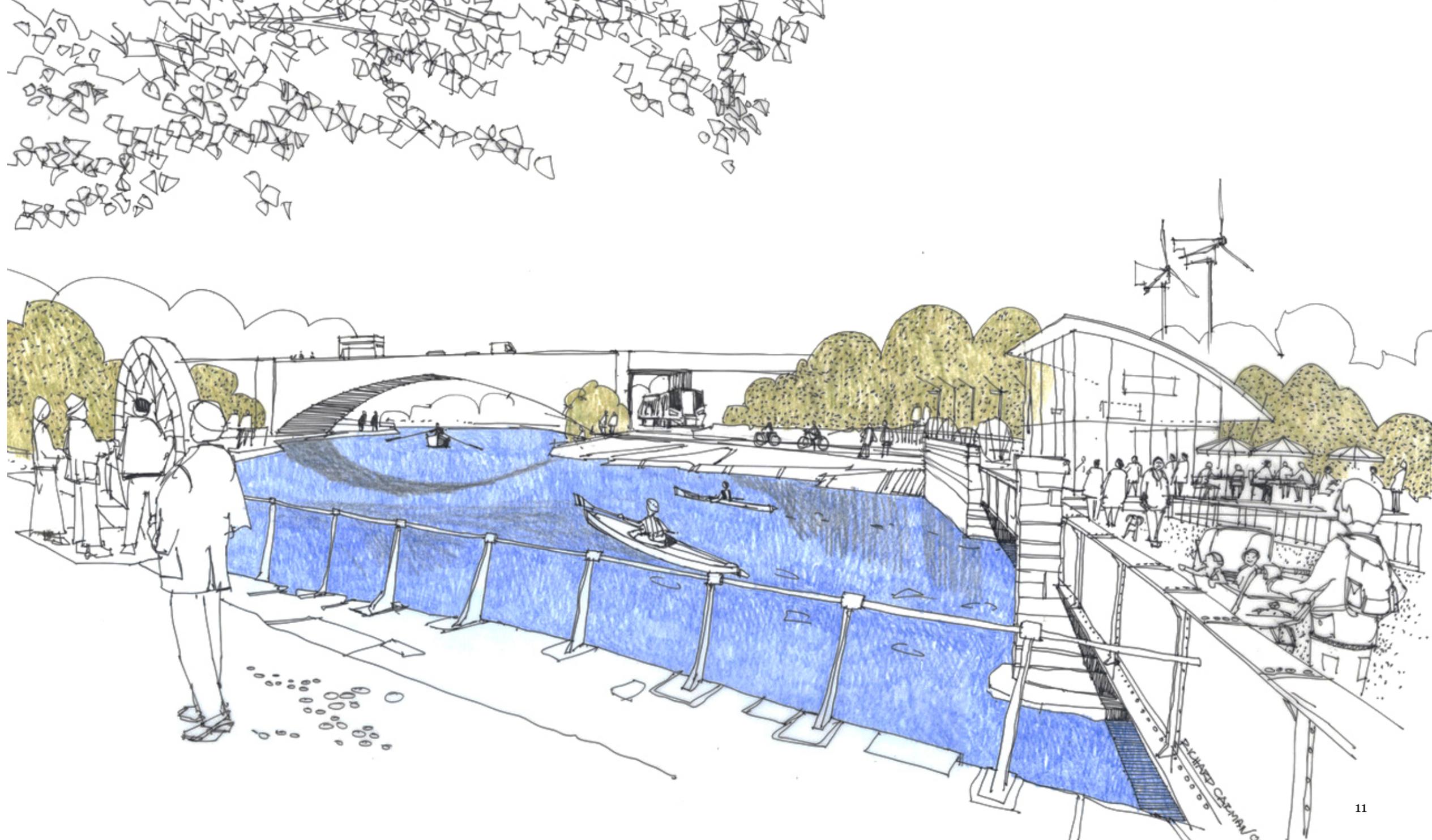
The railway closed in 1969, followed by the collapse of coal mining, which sealed the fate of Methil as a major port. As Levenmouth's economy focused on heavy and traditional industries it has struggled economically since.

In 2005, Scottish Enterprise and Fife Council worked in partnership to transform the former Kvaerner Yard at Methil into Fife Energy Park. One of the aims of the redevelopment was to establish the Levenmouth area as leader in the development of offshore wind. After erecting the world's largest wind turbine in 2011, Samsung Heavy Industries left the region in 2015. Subsequent recent investment through the Decommissioning Challenge Fund and the Vacant and

Derelict Land Fund is reimagining the area further, as an oil rig decommissioning facility.

Very little remains in the way of major employment, the main employers being supermarkets and Diageo, which opened its bottling plant in 1973 and expanded most recently in 2012. The majority of Fife's most deprived areas continue to be concentrated in Mid Fife, most significantly Levenmouth (SIMD 2016). Levenmouth has suffered from poor connections to the infrastructure networks of Central Scotland, however, in 2019, Transport Scotland announced the reopening of the train line with improved bus services, cycle and walking facilities, reconnecting Leven to the Fife Circle and beyond.

The Leven Programme was established in 2018 to bring together public bodies, businesses and community representatives who want to make a positive difference to the river and the surrounding area by: improving the physical and ecological conditions to the river; creating better access to the river and between communities; as well as creating opportunities to improve people's health, well-being and economic prospects. The programme aims to be a strong example of how organisations can collaborate to develop improvements that take environmental, social, and economic factors into consideration at the beginning of any significant community regeneration development or initiative.



“The strength in the (Leven Programme) shared vision to deliver solutions and interventions has never been more relevant... The Programme seeks to ensure environmental improvements or interventions deliver health, social and economic benefits to all”

Pauline Silverman, Senior Manager Partnerships and Places, SEPA

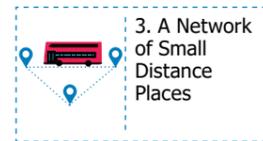


1. A Place-Led Approach

The Leven Programme is an ambitious, multi-agency partnership programme with a large number of partners, led by SEPA. They

are committed to pooling resources and innovative thinking to develop solutions to improve the environment and the lives of those living and working within the Leven catchment, and working towards goals in health, transport, community development and tackling the impacts of climate change.

In the past the River Leven sustained several hundred mills and factories, and the area was home to a population of miners and workers in the manufacturing industries. Once something that brought communities together and provided their livelihood, the river has now become a barrier, disconnecting people, towns, and communities from each other. Serious environmental challenges have also arisen, stemming from historical use of the River Leven including barriers to fish migration, water quality issues and physical river modifications. By improving the physical and ecological conditions of the river; creating better access to it and between communities; as well as creating opportunities to improve people's health, well-being and economic prospects, the Programme aims to breathe life back into the river, making the communities along it great places to live, work and visit.



3. A Network of Small Distance Places

The first of the Programmes' undertakings is the Connectivity Project, funded by Sustrans and Transport Scotland, focusing initially

on a 5km stretch of the river from Levenmouth to Cameron Bridge, then a further 20km stretch of paths through and between local communities of Buckhaven, Methil, Methilhill, Leven and Windyates.

Above-average levels of deprivation and unemployment within the Levenmouth area, as well as low levels of car ownership, reinforce the importance of access by active and public transport to local employment and education opportunities. The aim of the project is to create an active travel network that provides residents with improved access to education, employment, the environment, and each other, with the River Leven being at the very heart of these improvements.

A comprehensive and accessible path and cycle network is essential in encouraging more sustainable and active travel amongst people who live, work, and visit the mid-Fife area. Not only will the paths connect isolated communities to and along the river, but they will also connect people to jobs, training, town centres, leisure and health and well-being opportunities.

With the announcement of the reintroduction of the rail link to Leven in 2019, The Levenmouth Connectivity Project is working closely with Fife Council's Levenmouth Reconnected Programme to deliver a connected and cohesive active travel and public transport network.



4. A Place Designed for and with Local People

BRAG (Benarty Regeneration Action Group) Enterprises, is a social enterprise, founded in 1988 by a group of community activists as a

direct response from the community to the specific social and economic impacts of the demise of the coal industry. Today they work across a much wider region, helping disadvantaged communities achieve a more prosperous future.

BRAG assists communities by offering a holistic range of support that helps them identify and then tackle whatever needs present themselves, employing a community builder approach that includes everyone in the process.

Levenmouth Together was launched in April 2019, funded by Fife Council's Economic Development Fund, and the Town Centre Regeneration Fund to develop a community led approach to economic development. It is designed as a vehicle to inspire the entire community to become more enterprising, to take ownership of local events and initiatives and

“The communities along the River Leven have a proud history with an industrial base. This project opens the potential to connect those communities with each other and with nature. It shows the power of collaboration and gives Fife's Local Development Plan review a head start”

Bill Lindsay, Service Manager, Planning Services, Fife Council

to encourage local people to attend, volunteer and help facilitate and participate in their communities with BRAG's approach aiming to instil community spirit and a sense of purpose in both the individual and the greater community.

A recent report prepared by Fife Council has highlighted that empty units in Leven Town Centre have increased in proportion from 15.2% to 20.1% as of June 2020. BRAG, with the support of the Town Centre Fund and Fife Council, is set to complete the purchase of an empty unit on Leven High Street and create a facility that recognises the changing retail market and provides a community resource that will support greater social connectivity to meet the needs and desires of local people.



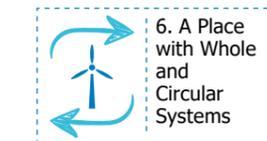
5. A Place that Reuses, Repurposes and Considers Whole Life Costs

The legacy of Scotland's industrial past means that almost a third of the Scottish population lives within 500 metres of a derelict site (Scottish Land Commission). In deprived communities, in areas such as Levenmouth (SIMD, 2016) the figure increases to 55%.

In 2019 there were 725.57 hectares and 223 sites of vacant and derelict land in Fife, 10% of which are located in Levenmouth. SEPA and Fife Council are currently working in partnership to identify landowners and contamination of sites along the

river to better understand how the land could be remediated and brought back into productive use. Collectively they aim to bring at least two vacant and derelict sites with the catchment into productive use by 2022.

This exercise is aligned with the Levenmouth Reconnected project which is currently consulting on and considering four options for the location of the Leven Station along the reinstated railway line, all of which look to reuse brownfield former industrial sites along the river.



6. A Place with Whole and Circular Systems

Managed by the Forth Rivers Trust, The Leven Green Network has two main focal points, people and wildlife. By working in

partnership to increase interest in, and awareness of, local wildlife and biodiversity, the hope is that the surrounding communities will develop a sense of ownership early on in the overall programme and experience the co-benefits of improved physical and mental health by creating easier access to the green network. Connections with the community have been established through the 'Fish in the Classroom' and 'Dynamic River' workshops at schools, adult education sessions on eel conservation, the citizen science project 'RiverWatch', guided wildlife walks focusing on surveying of otters, deer, amphibians and insects, river clean ups, pond dipping and bat box workshops.



7. A Place that Supports Sharing

The Leven Programme is actively sharing the learning from their project to demonstrate how other organisations can

collaborate to develop strategies, projects and a place-lead approach that takes environmental, social, and economic factors into consideration from the beginning of a community regeneration development.

In 2019, SEPA convened partners to sign the largest Scottish Sustainable Growth Agreement, formalising a commitment to work together to explore new and innovative ways to improve environmental performance and focus on practical actions the deliver environmental, social, and economic success.

The current partners are SEPA, Scottish Enterprise, Scottish Natural Heritage, Fife Council, Sustrans, Scottish Water, Fife College, Forth Rivers Trust, Green Action Trust, Diageo, Keep Scotland Beautiful, Historic Environment Scotland, Zero Waste Scotland, Fife Coast and Countryside Trust and The Coal Authority. They are sharing resources, knowledge, and expertise to improve the quality of the River Leven and its surrounding area. They are also currently developing a monitoring and evaluation process to evidence the impact of their collective efforts and offering access and learning from to process to other places that are seeking to adopt their approach.

Useful Links

Dumfries

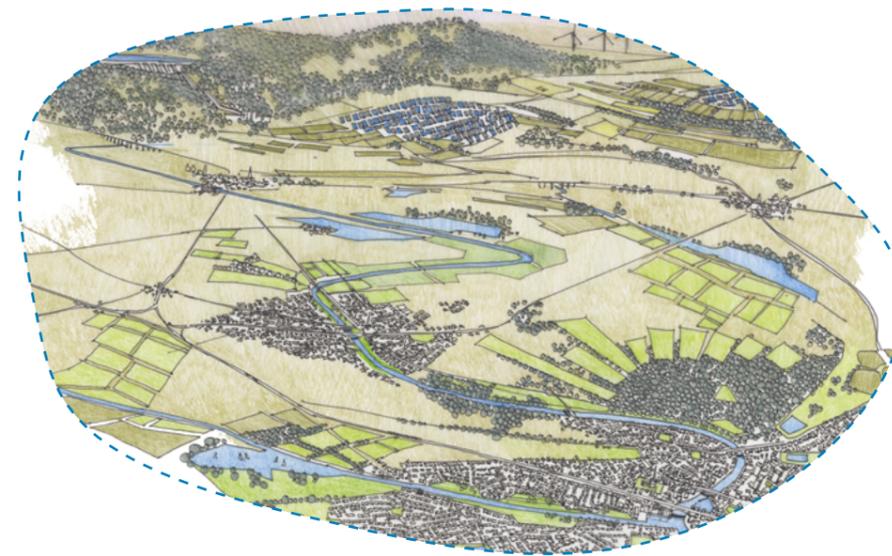
- [Midsteeples Quarter](#)
- [Midsteeples Quarter Video](#)
- [The Stove Network](#)
- [Dumfries Market Festival - The Guild](#)
- [Crichton Magazine](#)
- [Crichton Care Campus](#)

Leven

- [The Leven Programme](#)
- [Levenmouth Reconnected - Rail link](#)
- [Connectivity Consultation for the Leven Programme](#)
- [The Leven Visioning and Integrated Masterplan Report](#)
- [Forth Rivers Trust Leven Green Network](#)
- [Sustrans New Links Across Levenmouth](#)

Other

- [A&DS Designing for a Changing Climate: Carbon Conscious Places](#)
- [A&DS Designing for a Changing Climate: Pilot Study Reflections](#)
- [A&DS Designing for a Changing Climate: Planning Reform](#)
- [A&DS Town Centre Living: A Caring Place](#)
- [A&DS Place Skills for Housing Module 1 - Locating for Place Quality](#)
- [Scottish Government - The Place Principle](#)
- [Scottish Government Climate Change Plan 2018 - 2032 \(RPP3\) Summary](#)
- [Scottish Government Climate Change Plan 2018 - 2032 \(RPP3\) Update](#)



We would like to thank the following people for their contributions to this case study:

Matt Baker, Orchestrator, The Stove Network, Dumfries
Jennifer Challinor, Project Officer, Dumfries and Galloway Care Campus
Pauline Silverman, Senior Manager Partnerships and Places, SEPA

Illustrations by Richard Carman

8 Principles of Carbon Conscious Places

Following a year of active learning we identified eight principles for designing a carbon conscious place. The principles support a holistic approach to designing and adapting places to reduce, repurpose and absorb carbon. They are interconnected and are not intended to be used as a definitive list or set of solutions, instead they offer important concepts for the public, private and third community sectors to consider when planning, developing or activating places.

1. A Place-Led Approach

Understanding, appreciating, and working with existing assets, the surrounding landscape and the place identity. Using the right type of intervention, at the right stage, scale, and location

3. A Network of Small Distance Places

Connecting complete neighbourhoods to provide a network of places that support greater self-sufficiency and low carbon living. Enabling people to live, work and play without generating unnecessary carbon emissions.

5. A Place that Reuses, Repurposes and Considers Whole Life Costs

Retrofitting existing structures and utilising brownfield sites first, giving consideration to embodied carbon in place. Adding planting to existing hard infrastructure to support climate adaptation and carbon absorption. View structures as 'material banks' with components which are demountable, rebuildable, reusable and resaleable. Consider the cost of the entire lifecycle of a structure rather than only its initial capital costs.

7. A Place that Supports Sharing

Supporting the sharing of assets and services to enable lower carbon living and connect people to their neighbourhoods. From the micro to the macro this can include sharing tools, bikes, electric vehicles to accommodation and education facilities.

2. A Place of Small Distance

Creating complete and self-sufficient neighbourhoods with everyday/night services and facilities within a short walking or cycling distance (e.g. 20 minute place concept).

4. A Place Designed for and with Local People

Placing people's needs at the centre of decision-making, service provision and investment in our places and ensuring they are actively involved in key stages of the design process.

6. A Place with Whole and Circular Systems

Enhancing, repairing and joining up the different systems which support a healthy, carbon conscious place. This includes local food, heat, energy, water, green, habitat, transport, waste, housing and social systems. Using the landscape as a productive resource. Ensuring the place planning and delivery process understands and supports a whole and circular systems approach.

8. A Place Designed in Time

Ensuring the place planning and delivery process considers the dimension of time. This includes creating long term visions as well as using short-term approaches to test out interventions.

Architecture & Design Scotland

Ailtearachd is Dealbhadh na h-Alba



Scottish Government
Riaghaltas na h-Alba
gov.scot

Find out more:

www.ads.org.uk

@ArcDesSco

E: info@ads.org.uk