

The 'City' represents the urban city and town centres across Scotland. The varied mix of historic and new buildings displays a distinctly Scottish character. They are a focus of commercial activity, both offices and shopping, they host important transport hubs, and are home to much of the population.

Our urban centres are already impacted by severe weather, especially flooding and storms – and increasingly from overheating. Disruption here often has consequences far beyond the local area. We can build climate resilience through increasing greenspace, improving flood management, retrofitting and maintaining our buildings, and securing our infrastructure.

### Unadapted



### Adapting



### Maintain Buildings

Buildings are damaged by severe weather like high winds and heavy rainfall, as well as water penetration that causes damp, mould and condensation. Poor ventilation can lead to overheating. Good maintenance can improve building fabric, remove harmful vegetation, and give better protection against rain water. Recommissioning original features in traditional buildings, such as vents that have been blocked up, may provide sufficient passive ventilation.

### Unadapted



### Adapting



### In-Street Rain Gardens

Urban streets are hard surfaces prone to localised surface water flooding and increased air temperature leading to overheating. By introducing permeable surfaces and green infrastructure, like trees and rain gardens, we can reduce local flood risk, provide natural shading, reduce overheating on streets and surrounding buildings, and improve local air quality.

### Unadapted



### Adapting



### Local Growing

In many urban areas vacant sites can be used, even on a temporary basis, to produce food and increase greenspace, which benefits surrounding streets and buildings. These innovative projects create community spaces that have a wide range of benefits to local people and the environment. They also improve community cohesion which is critical to resilience.

# Info sheet 1: The City

## Unadapted



## Adapting



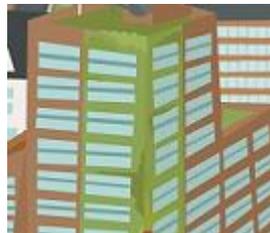
### *Replace Car Parking*

Large areas of our urban centres are allocated to hard-standing car parking, which contributes to flooding and the urban heat island effect. By improving public transport and active travel links we can reduce demand for parking. Hard-standing surfaces can be made permeable and make room for greenspace. This will improve drainage and reduce local overheating.

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## Adapting



### *Retrofit Buildings*

Many buildings will need to be retrofitted to perform in a warmer climate with both heavy rainfall and prolonged dry spells. They need to be well-ventilated to cope with overheating and damp, which may require alteration of the building or sometimes recommissioning original design features, like vents, that have not been in use. Nearby green infrastructure and external fitting of green-walls and roofs can improve insulation, reduce runoff and provide cooling.

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### *Healthcare Providers*

Healthcare providers need to deliver critical services in a changing climate. Estate buildings need to be resilient to the risk of flooding or overheating, and emergency responders must plan ahead for change. Health issues may emerge around changing patterns of disease and lifestyle. This may change the way health care services and assets are provided and managed.

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## Adapting



### *Green Carparks*

Car parking is provided in higher density multi-storey carparks, freeing up space for more greenspace in the urban centre. The carpark building can also incorporate green infrastructure in walls and roof, reducing local temperature, water runoff, air pollution and visual impact.

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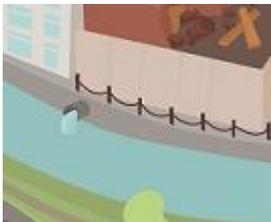
**Adapting**



*Resilient Transport*

Transport can be disrupted by severe weather with knock-on effects that interrupt the flows of people and goods throughout the network. The resilience of transport networks, including active travel, can be increased through investing in maintenance, innovative engineering solutions and capital expenditure on improvements. Smart transport networks can improve response and communication.

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*Floodplain Park*

Creating a riverside park reconnects the river to its floodplain providing room for water storage during floods. Removing stream culverts to create an open naturalised watercourse reduces the chance of blockage and lowers flood risk. The park is a major increase in urban greenspace providing health benefits and improving active travel connections within the city.

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**Adapting**



*Redevelop Derelict Sites*

Redeveloping derelict sites can provide centrally located homes and commercial space, while ensuring heritage buildings are actively used and maintained. Redevelopments can increase climate resilience by being designed for weather resistance, ventilation and water management. It can also include green infrastructure like green walls and roofs.

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**Adapting**

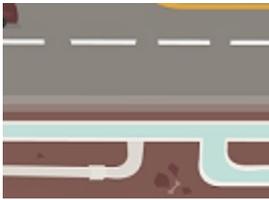


*Public Space*

Public spaces can integrate green infrastructure, such as pocket greenspaces and street trees, and permeable surfaces. This can provide shade and limit overheating on hot days, reduce puddles on wet days and improve air quality. Greening and pedestrianisation creates desirable public spaces, making them more attractive to residents and visitors.

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*Drainage Network*

Heavy rainfall is expected more often with climate change. Draining this water through ever larger underground systems, and its subsequent treatment, is unsustainable. Surface water can be managed through widespread integration of sustainable drainage systems (SUDS) such as swales and permeable surfaces – where water is managed locally.

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*Green Streets*

Reducing city centre traffic makes space for integrating green infrastructure, including pocket greenspaces, street trees, rain gardens and swales. These make urban spaces more attractive and usable, particularly as temperatures rise and rainfall increases. They also create community spaces, support active travel (walking/cycling) and encourage local businesses like street cafés. Well-designed green infrastructure also benefits biodiversity.

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**Adaptation Scotland**

Sniffer, Edinburgh Centre for Carbon Innovation, High School Yards, Infirmary Street, Edinburgh EH1 1LZ, Scotland UK

T: 0131 651 4675 E: [adaptationscotland@sniffer.org.uk](mailto:adaptationscotland@sniffer.org.uk) W: [www.adaptationscotland.org.uk](http://www.adaptationscotland.org.uk)

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