Botanics researches ways of using plants to fight floods

A £500,000 initiative has been launched in Edinburgh to research ways that the strategic use of plants can help make towns and cities more resilient against increasing extreme weather events such as flooding.

Scientists, horticulturists and urban planners gathered at the Royal Botanic Garden Edinburgh (RBGE) to launch the “Plants with Purpose” initiative.

They say that designing plants into buildings and streets could help soak up excess rainfall, cool and clean the air and even improve people’s health and wellbeing.

The initiative will research and demonstrate the impacts of plant choice and location on how urban spaces react to differing weather patterns.

Severe flooding because of higher intensity storms currently costs the UK around £1.3 billion per year, with hotter summers with more intense rainstorms set to progressively impact everyone from big businesses to local authorities and householders.

The new initiative will aim to help people make choices on how they can use plants to mitigate the effects of climate change, from achievable ways of absorbing flash flood water, to

moderating extreme temperatures in buildings and providing the right conditions for endangered pollinators.

Raoul Curtis-Machin, Director of Horticulture and Visitor Experience at RBGE, who is heading the research, said: “The twin threats of climate change and biodiversity loss are causing real social and economic shocks for urban communities around the UK.

“We need to start moving much faster to adapt to these challenges.”

The RBGE has worked in partnership with Heriot-Watt University to develop a clearer understanding of the hydrology of urban environments and the benefits that can be achieved in even short periods of time.

This includes dramatic changes to flood conditions brought about by rain gardens and storm water butts.

Dr Daniel Green, Assistant Professor of Nature based Solutions at Heriot-Watt University, said: “Climate change is causing more frequent and severe rainfall events and this will only worsen in the future, so we need to adapt to our changing weather conditions.

“One of the ways of solving this urgent issue can be found by adopting Nature-based Solutions and working with natural processes to help slow and store water in our urban areas.

“These can be larger-scale interventions, such as rain gardens or bio-swales, or smaller, more focused, source-level adaptions.”

RBGE scientist Dr Emma Bush added: “Fundamentally, we need to re-imagine the role of urban nature and our relationship to it, because working with nature will benefit us all. It doesn’t need to be difficult, and everyone can join in.”

Edinburgh Botanic Gardens. Photo: Martin P. McAdam www.martinmcadam.com