Sheffield Green Roof Audit 2010

**Background**
Since 2005 there has been policy support for green roofs within Sheffield and in 2007 the green roof centre launched as a National Centre of Excellence for green roofs and aimed to provide support for green roofs and build and disseminate best practice, with help from Groundwork Sheffield they have moved to support Sheffield in leading the way on blue and green infrastructure.

In order to determine the success of the collaborative efforts of Sheffield City Council, the green roof centre and Groundwork Sheffield a audit was carried out to show the uptake and delivery of green roofs across Sheffield.

**Audit Aims**
The project aims to map the quantity, size, location and type of green roofs in the Sheffield area. An audit was carried out over 6 months, by a specifically recruited research officer, supported by members of Groundwork, The Green Roof Centre and Sheffield City Council. The project has led to the creation of a GIS based database of size, composition and geographical distribution of Sheffield’s green roof developments, which will be updated as new green roof sites go through the planning process. A secondary aim of the project is to transfer the findings of the audit to promote and encourage the uptake of the best-practice in green roof design.

**Audit Methodology**

**What data was collected?**
The survey data collected includes the location and ownership of green roof projects, the size of the green roof in metres squared, and the general type of green roof, as follows:
- Extensive (light weight with low cost and maintenance)
- Intensive (Greater Weight, Cost and Maintenance)
- Roof Gardens (Intensive roofs designed as a amenity space, often incorporate planters and paved areas)
- Residential (Smaller scale roof delivery)

Information was also gathering regarding substrate depth, the development use, plant diversity and general notes on wildlife features and vegetation condition. Site Visits also created a database of Photographs.

**How the data was collected**
The audit operated through the collaboration of Groundwork Sheffield, The Green Roof Centre and Sheffield City Council who designated a research officer to collect and bring together information, with the support of the involved parties.

Firstly existing data on green roof developments, from the various parties were compiled and cross referenced so that all project duplications were identified and eliminated. Satellite imagery was used.

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preliminarily to confirm the location and existence of green roofs and followed up with site visits. Further green roof projects were identified by trawling through planning applications and following up word of mouth leads. Green roof suppliers and contractors were contacted and aided in gathering further information about projects and identifying existing and proposed green roofs, however not all of the companies contacted responded. As such without the support of the green roof centre and Sheffield city council it would have been difficult to carry out a comprehensive survey.

Public events and the internet were also used to source information from the general public about green roofs of which they are aware. However, this lead mostly to the identification of small scale domestic green roofs, mostly of a DIY nature. Although interesting this information is less important to the survey than the large commercial roofs and as such great consideration was not given to investigating them.

**Audit Results**

Green roofs provide multiple benefits and represent a critically important move towards sustainable and environmentally low impact buildings and communities. The Audit allows measure by which policy support for green roofs effects the up scaling of their development.

The audit shows that the creation of a Green Roofs Policy within Sheffield planning department alongside the consultancy and guidance of the Green Roof Centre and Groundwork Sheffield has lead to the creation of approximately 25,000 m² of green roof within the city.

**Up take of Green Roofs in Sheffield: Time line**

Green roofs provide multiple benefits and represent a critically important move towards sustainable and environmentally low impact buildings and communities. The Audit allows Shows the effects of policy support for green roofs in the up scaling of green roof delivery.

Map showing Green Roof Type – Extensive, Intensive and Roof Garden.
Information collated shows the main developments incorporating green roofs, the types and standard of green roofs being installed across Sheffield and indicates a change in the norm green roof within the city.

Within Sheffield there are 48 green roofed developments, this excludes domestic green roofs and green roofs smaller than 10 metres\(^2\). Of the 48 developments 14 (29%) are owned by local authority and a further 7 (15%) by the University of Sheffield. The other 27 (56%) are commercially owned with residential, office and warehouse constructions delivering green roofs.

Policy support for green roofs in Sheffield began in 2005 and figures from the audit show that this has up scaled green roof projects within Sheffield. Before 2005 there were only 5 commercial green roofs, during 2005, the year that policy support was first introduced 6 further green roofs were developed. By 2007 a further 6 Green Roof were introduced creating 17 green roof developments across Sheffield. In 2007 the green roof centre launched and since then 31 Green Roofs have been installed giving Sheffield a total of 48 green roofs.

A move towards ‘best practise’ green roofs

In 2005 (6 out of the 11) 55% of Green Roofs had a substrate depth of 80mm or more

At present 85% (41 out of 48) of Green Roofs have a substrate depth of 80mm or more
With 40% (19 out of 48) having a substrate depth over 100mm
* garden roofs assumed over 100mm.
The survey results indicate that implementing supportive policies creates a up scaling in green roof delivery and the support of policy makers in other UK cities would potential lead to enormous growth in green roofing.

Data shows that there is a clear uptake of green roofs within the central area of Sheffield, however the audit highlights ways in which the project can progress to increase the potential uptake of green roofing in Sheffield. There are very few green roof developments on industrial and warehouse buildings (Only Big Yellow Self Storage). There are no retrofitted green roof projects. There are still some developments covering only minimal areas of development roofs. There are few roofs which incorporate wildlife features such as logs, bird boxed, water features.
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