

## Guidelines for the Maintenance of the Icopal Extensive Sedum Green Roof System.

- **Establishment Post Planting** - It is important, (especially in the hotter, drier summer months), that once laid, the sedum plants are kept moist to prevent drying out until the roots are fully established within the substrate below. Therefore, it is essential that there is some means of getting water onto the vegetated area. This could be for a period of up to 25 weeks. Once the roots have established into the substrate there is little need for any subsequent irrigation. However on slopes of over 10 degrees it is recommended to have a permanent irrigation system (trickle, seep-hose or even sprinkler systems), as water retention becomes more of an issue due to faster run-off rates.
- Sedum plants will not always be 'green' throughout the year. Often they will change colour relating to the prevailing weather conditions. For example when under stress the foliage can turn red. This is most likely to occur in the hotter drier months, or in colder frosty periods. Plant stress can also occur if insufficient nutrition is available to the plants, which can be remedied by the application of a slow release fertiliser. This needs to be applied at the right time of year (please see notes on "Feeding" below). The sedum varieties will flower during the spring and summer periods, and some plants may die back in the autumn and winter.
- Most sedum green roofs are low-maintenance, but 'low-maintenance' does not mean 'no maintenance'. It is important that a regular maintenance schedule is put in place once the system has been installed. This should include: -
  - **Removal of weeds** – As sedum species are not fast growing or competitive plants, it is important that any weeds are removed to reduce the likelihood that they become established and therefore dominate the green roof. Any pebble vegetation borders should also be kept weed free.
  - **Feeding** – It is recommended that a suitable balanced fertiliser is applied to keep the sedum plants healthy. This may be a spring feed of slow/controlled release fertiliser to last the growing season, or more regular granular/liquid feeds throughout the growing season. A recommended balanced slow-release fertiliser should be applied in the spring, just before it is due to rain. There should be no fertiliser applied once the plants start coming into the autumn

- period where, due to the prevailing weather, growth naturally slows down.
- **General “Tidying-Up”** - The sedum plants may be “tidied up” in the autumn months, to reduce any long foliage or take off dead flower spikes. The flower spikes should only be taken off once the flowers have set seed and dropped it again – generally in autumn. This process could be carried out using a strimmer, making sure that any exposed waterproofing is not damaged.
- **Irrigation** - ‘Top down’ sprinkler systems can be used due to the ease of installation, maintenance and de-commissioning. In addition, most plants are also more adapted to top down watering as opposed to being irrigated at root level. Drip line or leaky pipe systems are difficult to maintain, often become blocked and are more susceptible to splitting than irrigation pipes that have no penetrations.

Generally irrigation systems will need a supply of mains water at roof level, at between 2.5 to 3bar pressure / 60 litres per minute flow rate.

Irrigation systems may be activated every evening / early morning until the area being irrigated is fully saturated (30mins to 1 hr). This is however subject to current climate conditions and time of year.

- Regularly check that the sprinklers are correctly positioned, prevailing wind may affect coverage.
- For Tank Fed Systems –
  - Regularly check that the tank water is suitable for the roof irrigation.
  - In the event that the water becomes contaminated, turn off the irrigation immediately and drain the system.
  - Regularly check that the submersible pump remains submerged in the tank
  - Do not operate the pump out of the tank, this will cause the pump to fail
  - With the onset of winter, the system will generally need to be drained and decommissioned
- **Other General Information** - Check to ensure that any exposed waterproofing is in good order that any fall protection systems in place are in good condition, and that walkways are free from obstruction.
- If there are any pebble borders on the green roof, pull out any vegetation that may be growing within them.



- If there are any areas without vegetation in the main sedum planting, then spring is a good time to replant these areas. Simply break /tear pieces off healthy, well-established plants and push them into the growing medium, or add extra growing medium if bare. Keep them well watered and they will soon take root
- If any maintenance implements are used, e.g. forks, hoes, trowels, etc, they must not reach a depth where they are likely to puncture or damage the system beneath the substrate (especially the waterproofing!).
- Any, (landscape), or other contractor, working on the Icopal Extensive Sedum Green Roof System should be made aware of its make up, to avoid damage to any of the system components.
- Generally once established, the Extensive Sedum System will need little irrigation. However, it may be necessary to irrigate in prolonged periods of low rainfall and warm temperatures, or when the system is on a slope over 10 degrees, where water retention becomes an issue.
- Do not replace any of the designated plants for ones which may grow larger. This could increase the roof loading which may be greater than the recommended guidelines. The new plant may also need a greater substrate depth to grow sufficiently well.
- Do not add any other material to the roof, which is likely increase the roof loading, and carry it over the recommended guidelines.
- It is recommended not to put in plants which have a particularly “aggressive” root system, to protect the integrity of the waterproof membrane.
- Check and if necessary, clear the drainage outlets on a regular basis to avoid any blockages and potential ponding or flooding.
- Plants need to be kept pest and disease free, and fertilised regularly to enable them to remain healthy, and therefore grow to their expected potential.
- **Appropriate care should be taken to ensure safe operation when visiting and maintaining green roofs. Some of the materials can be slippery when wet and fall protection systems should always be used. Please check government guidelines for working at heights.**