



M-TRAY® MODULAR GREEN ROOF SYSTEM

SPRING 2016

WALLBARN presents the new M-Tray® for 2016. M-Tray® has been developed and further improved in order to make sedum roofs easier to install with less disruption to both the plants and the structure. M-Tray® is designed to also give a more seamless and verdant finish and an instant green roof.



Wallbarn is in the forefront of developments in the extensive green roofing sector and has always provided products which mix top quality elements and ingredients with user friendly, hassle free installation.

THE PURPOSE OF M-TRAY® IS TO ENHANCE ROOFTOP LIVING

Our new design allows us to supply the best quality vegetation to site. The fully established, mature sedum or wildflower plants are contained within easy-to-carry trays which click together to form an almost invisible joint.

M-Tray® has been specifically designed* with the installer in mind. This is not an adapted tray, it is designed for purpose. Exactly 4 units per m² make estimating and installation much easier.



WALLBARN IS A MEMBER OF THE GREEN ROOF ORGANISATION (GRO)
SUPPORTS THE UPDATED GRO CODE FOR GREEN ROOFING.



*M-Tray® has been designed and developed by Wallbarn in UK and is the subject of Community Registered Design (No. 002953943-0001) and US Design (Application No. 29/553,129).

WHY MODULAR?

The main advantages of modular over roll-out green roof systems surround convenience, speed, future-proofing and instant results.

All the elements required for a successful green roof have been measured and installed into the M-Tray® modules at the nursery, so users can feel confident that the plants, growing medium and filtration components are suitable and compatible, and at the correct level to give strong, healthy growth over the long term.

The trays are grown for a period of at least 6 months and all will have been through at least one spring growing season; so the plants are well established, healthy and strong, and fully integrated into the substrate (unlike sedum blankets, which are not).

Mess and disruption are big issues with roll-out systems. Moving bags of aggregate-based substrate onto rooftops is fraught with risk – the aggregate goes everywhere and as it is so granular, it can damage waterproofing membranes very easily. Sedum blankets are also supplied rolled up, so the plants get damaged during the transport and installation process.

This is not the case with the M-Tray® modules.

Another key benefit is accessibility. As each module is 500 x 500mm, one M-Tray® can be carried by one operative. For areas which are very difficult to access, such as single storey extensions, domestic projects and other completed structures, roll-out is simply not possible. M-Tray® can be hand-balled into even the most awkward areas, even carried through a window (pictured) if necessary. They are the perfect retro-fit product.



Speed is also a major factor. It is estimated that M-Tray® can be installed at least twice as quickly than roll-out systems. A team of two contractors can install approx. 400 square metres per day easily.

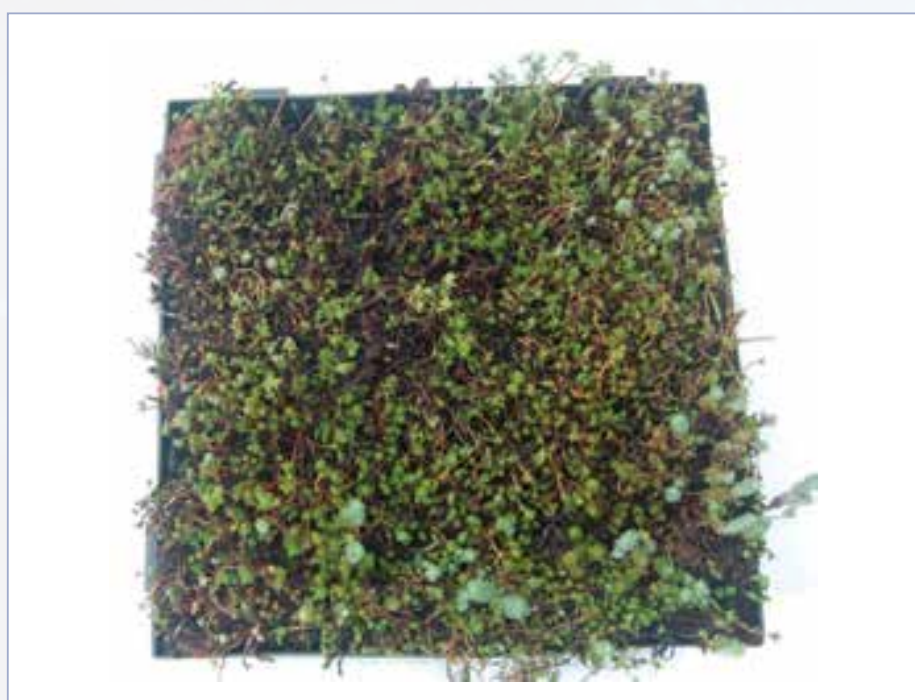
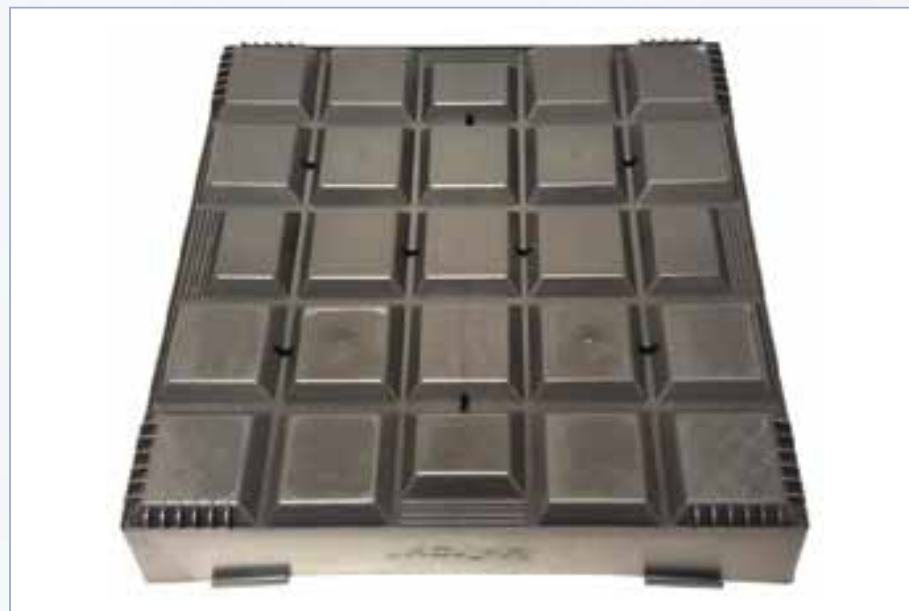
It is also an instant green roof. Since the plants are less shocked by the installation process, as soon as the trays are connected together the whole area is filled with well established plants. They will continue to mature straight away, forming a seamless layer of vegetation much faster.

Access to the roof is future-proofed. If there are problems with the deck beneath or inspection is required, one M-TRAY® or section can easily be lifted out without disruption to the whole roof.

THE DESIGN – WHAT’S NEW?

Shape

M-Tray® has been especially designed for the extensive green roof market.



The module measures 500 x 500 x 100mm. As four units make up exactly one square metre estimating is a far easier process.

There are less drainage holes than in previous versions to keep water within the green roof system for longer. This allows the plants to absorb more rainfall, increasing attenuation and delaying discharge into outlets.

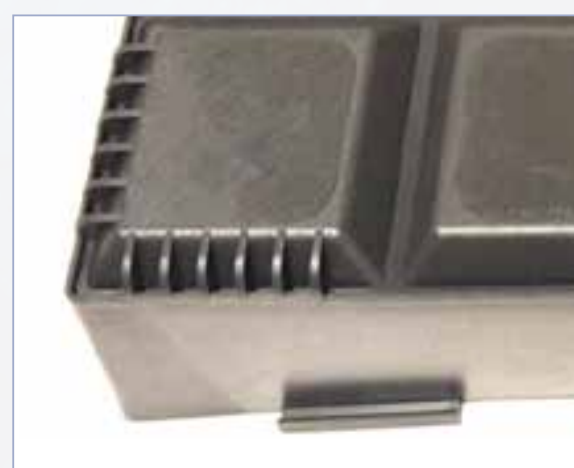
Our unique blend of substrate coupled with water attenuation geotextile helps reduce rainfall run-off as well as providing greater and prolonged hydration during dry periods.

The edges of the module do not have drainage holes in order to prevent the sedum dying back at the edges.

Stronger plant growth at the edges creates a more seamless layer of vegetation when the modules are connected.

Four gently ridged hand grips are positioned to enable installers to carry each module easier.

Smooth edges & connecting bracket



The connecting brackets are designed to give a tight connection, with the minimum of gap between each module. The joint is only 4mm so the plants will grow over it quickly, making it disappear in ultra-quick time **(White units for illustrative purposes only – all M-Tray® units are supplied in black colour).**

The corners of the modules are rounded and smooth, so no sharp edges (which might puncture the membrane beneath) are present. It also makes handling the trays easier and the edges can be mounted onto Wallbarn pedestals if additional height is required.

Trims & edging

100mm aluminium edge trims and connectors fit neatly onto the sides of the modules. Fixings are not always necessary and they are designed to slot together neatly.



STEP BY STEP INSTALLATION

The problems associated with bulk bags filled with sharp aggregate or sheet membranes blowing away in the wind are avoided using the Wallbarn M-Tray® system as they have all the necessary elements contained within them.

M-Tray® modules will be transported to site shrink wrapped on pallets for easy, clean delivery. They can be craned safely onto the roof if necessary.

Each module is 500 x 500 x 100mm, so exactly 4 units make up one square metre.

Unpacking the pallets is a simple process. None of the contents will spill out and each module can be carried by one person without disruption.



A separation and filtration geotextile layer should be firstly installed onto the deck. This protects the waterproofing and prevents abrasive damage. Wallbarn usually can supply a 300gsm recycled fleece for this purpose as an additional item.

Start from the middle of the green roof and work outwards towards the edges. Place a module down and then click the next into place. There are two connection points on two sides of each module. Once connected up on all four sides, the module will be secured on all four sides.



The edges should be filled with a border of washed riverstones, in accordance with the GRO code of practice. Objects such as roof lights and cables should be surrounded with riverstones to prevent root invasion and act as a fire break.

An aluminium edge trim can be added at any exposed edges or where the stones need to be held away from objects such as drainage outlets.



The modular sections mean detailing around objects is a simple process and clean lines are created. Hard landscaping sections such as paving and decking, mounted onto Wallbarn pedestals, can be added to the area to allow for regular access. As everything is suspended on top of the deck, drainage is uninterrupted.

Pop-up sprinklers or other features can be installed in conjunction with M-Tray® to further improve the landscaping. M-Tray® provides real landscape solutions and enhances rooftop living.



As well as the sedum trays, Wallbarn plants up a wildflower mix into the M-Tray®. A varied mix of at least six different native species has been selected. All these flowers and herbs are low growing, hardy species, chosen to be pollinators for butterflies and bees.





KEY ADVANTAGES

The advances made in the design of the new M-Tray® model for 2016 include:

- deeper cavities for extra root growth
- optimum drainage leading to stronger plant growth
- more established vegetation at point of installation
- more efficient transport and packaging
- exactly 4 units per m²
- easier to carry trays with smooth handles
- closer connection between trays for more seamless plant growth
- no sharp edges, less risk to the membrane
- nothing spills out, less mess
- made from recycled plastic with recycled substrate
- less packaging, less waste
- UK designed and manufactured in UK – designed for the job



EXPORT & LICENSING OPPORTUNITIES

As well as supplying live products for installation on UK green roofs and landscaping spaces, Wallbarn is committed to M-Tray® as an export product.



We can supply the modules as empty trays for local landscapes worldwide to plant up and propagate according to the local climactic conditions and their own markets.

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Further worldwide design registrations are currently being carried out.

Licensing opportunities are available for both the M-Tray® brand and the mould, which can be granted to specific partner companies across the globe. An M-Tray® "Bible" is available to guide partners in the growing and installation process and we can draw on many years of experience.



Our aim is to get more green spaces into urban centres worldwide. With M-Tray® this is a possible and economically viable prospect. Join us in our vision.





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Standard sedum species -2017



Standard sedum species used for M-Tray® modular green roof units planted Spring 2017
Flowering period: June to September across the different mixture of species.



Sedum Acre

Flower Colour: Yellow
Flowering Period: June-July
Growth Habit: Ground Cover/
Mat-Forming
Characteristics: Medicinal Plant



Sedum Kamchaticum 'Stone Crop'

Flower Colour: Brilliant Pink
Flowering Period: May-July
Growth Habit: Ground
Cover/Low Growing
Characteristics: Shade Tolerant



Sedum Acre Oktoberfest

Flower Colour: Bright Cream-
White
Flowering Period: June-August
Growth Habit: Ground Cover/
Cushion/Mat-Forming
Characteristics: Dainty,
Drought Resistant



Sedum Montanum Orientale

Flower Colour: Yellow
Flowering Period: June-August
Growth Habit: Ground Cover/
Low Growing
Characteristics: Ornamental
Foliage.



Sedum Album

Flower Colour: White
Flowering Period: June-August
Growth Habit: Evergreen/Mat-
Forming
Characteristics: Honey-Bee food
Plant.



Sedum Oreganum

Flower Colour: Yellow
Flowering Period: June-August
Growth Habit: Dense
Characteristics: Attracts
Butterflies



Sedum Ellacombianum

Flower Colour: Yellow
Flowering Period: June-August
Growth Habit: Dense/Mat-
Forming
Characteristics: Honey-Bee
Food Plant



Sedum Reflexum

Flower Colour: Yellow
Flowering Period: June-August
Growth Habit: Ground Cover
Characteristics: Culinary
Herb/Honey-Bee Food Plant.



Sedum Floriferum

Flower Colour: Golden
Flowering Period: July-August
Growth Habit: Evergreen/Dense
Characteristics: Honey-Bee
Food Plant



Sedum Selskianum
Flower Colour:Golden
Flowering Period:August-September
Growth Habit:Cushion/Dense
Characteristics:Honey-Bee Food Plant



Sedum Forestianum
Flower Colour: Bright Yellow
Flowering Period:June-August
Growth
Habit:Rosettes/Evergreen
Characteristics:Strong Growing Sedum



Sedum Sexangulare
Flower Colour: Lemon Yellow
Flowering Period: July-August
Growth Habit:Dense
Characteristics: May turn Red in the Autumn in full Sun.



Sedum Hybridum 'Czars Gold'
Flower Colour: Golden
Flowering Period:May-August
Growth Habit:Evergreen/Mat-Forming
Characteristics:Heavy Blooming of Yellow Stars.



Sedum Spurium
Flower Colour: Dark Pink
Flowering Period:July-September
Growth Habit:Dense
Characteristics:May turn red in Autumn.



Maintenance Schedule for Wallbarn Extensive M – Tray modular Green Roof Systems

1.0 Introduction

1.1 Green roofs are living structures and as such need attention throughout their lifespan. Some vegetation types such as sedum are planted as they require less maintenance than grass roofs for example. However, regular attention to soil moisture and feed levels as well as the removal of weeds is essential to maintain optimum performance.

2.0 Extensive M – Tray modular roofs

2.1 The M-Tray system is a nursery grown portable modular system that consists of an HDPE tray filled with a blend of mineral organic substrate and pre-grown with Sedums;

2.2 Spring schedule

- Remove weeds by hand pulling only
- Apply Wallbarn slow release granular fertiliser at a rate of 50gsm
- Clear debris from drainage outlets
- Generally inspect vegetation area and monitor poor growth areas
- Over seed poor growth areas if required

2.3 Autumn schedule

- Remove weeds by hand pulling only
- Clear debris from drainage outlets
- Generally inspect vegetation area and monitor poor growth areas
- Over seed poor growth areas if required

3.0 General points

3.1 Sedum is a unique plant in that its metabolism is reversed from most other plants. Sedum closes its stomata during the day which contributes to it being more efficient at conserving water. Sedum leaves will change their colour at times throughout the year and will often take on a russet colour during drought, strong wind and frost. This is normal and they will revert to their normal green hue over time. Should the stems and leaves start to 'shivel' back then this is a sign of a problem and likely due to lack of water. Irrigation must be applied to reverse this and the levels of water checked for several weeks until the sedum has recovered.