

M-TRAY® MODULAR GREEN ROOF SYSTEM

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



Wallbarn has been at the forefront of developments in the extensive green roofing sector for a number of years, and has always strived to provide products which mix top quality elements and ingredients with user friendly, hassle free installation.



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 join.

M-Tray® has been designed and developed by Wallbarn in the 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 include convenience and speed of installation, future-proofing, and the delivery of instant results.

All the elements required for a successful green roof have been measured and installed into the M-Tray® modules at the nursery. 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 has been proven that green roofs constructed using Wallbarn M-Tray® are installed much faster than in traditional roll-out methods.

It is also an instant green roof. Since the sedum 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 start to grow 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.

WHY MODULAR?

The modular green roof panels are packaged and delivered in the most convenient manner.



By being palletised, the plants can get to the roof quickly and without the risk of damage.



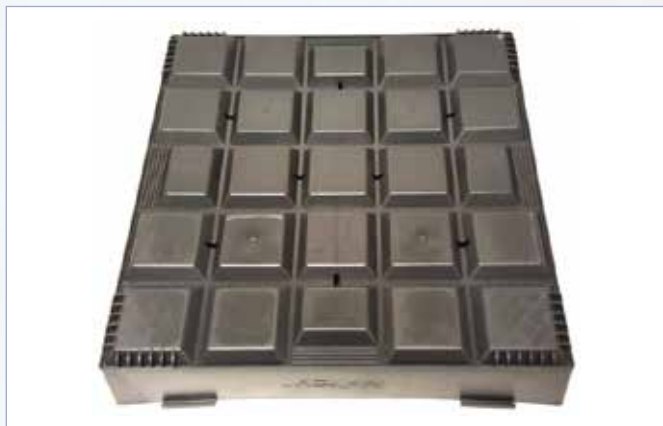
The speed and ease of installation is illustrated very well in the images shown here.



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.

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 6mm 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 designed to slot together neatly although they are not always necessary.



STEP BY STEP INSTALLATION

The problems associated with giant 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 can supply a 300gsm recycled fleece for this purpose.

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 fully secured.



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.



M-TRAY® WITH WILDFLOWER

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 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

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.

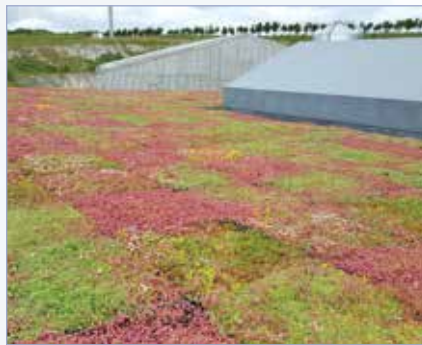
We can supply the modules as empty trays for local landscapers worldwide to plant up and propagate according to the local climactic conditions and their own markets.

Licensing opportunities are available for both the M-Tray® brand and the mould, which can be granted to specific partner companies across the globe.

M-Tray® has been designed and developed by Wallbarn in the UK and is the subject of Community Registered Design (No. 002953943-0001) and US Design (Application No. 29/553,129). Further worldwide design registrations are currently being carried out.

An M-Tray® “Bible” is available to guide partners in the growing and installation process and we have drawn on many years of experience to create this publication.

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.



TECHNICAL DATA

PRODUCT	M-TRAY® MODULAR GREEN ROOF CONTAINER
SUITABLE FOR	EXTENSIVE GREEN ROOF PLANTS WITH LIGHTWEIGHT, FREE-DRAINING SUBSTRATE
TYPE OF CONSTRUCTION	PERMANENT
WIDTH / BREADTH	500MM X 500MM
HEIGHT	100MM
SHAPE OF WALLS / SIDES	TAPERED / ANGLED
UNITS PER M2	4
MATERIAL	RECYCLED POLYPROPYLENE
THICKNESS OF MATERIAL	3MM
INTERNAL RIDGE HEIGHT / RESERVOIR HEIGHT	20MM
NUMBER OF INTERNAL DRAINAGE RESERVOIRS	25
DRAINAGE HOLES PER UNIT	8
DISTANCE BETWEEN TRAYS AT BASE	20MM
DISTANCE BETWEEN TRAYS AT 50MM FROM BASE	10MM
DRY WEIGHT (EMPTY)	1.1KG
WEIGHT PLANTED & SATURATED ❶	24KG
CONNECTORS PER UNIT	4
NUMBER OF HANDLES ON UNDERSIDE	4
DETAIL OF CORNERS / EDGES	SMOOTH / REINFORCED
EU DESIGN TRADEMARK	NO 002953943-0001
US DESIGN TRADEMARK	NO 29/553,129
❶ BASED ON FILLING WITH WALLBARN PRODUCED & APPROVED LIGHTWEIGHT, EXTENSIVE GREEN ROOF SUBSTRATE; FULLY PLANTED WITH MATURE SEDUM PLANTS TO RECOMMENDED COVERAGE AND SATURATED.	

INTRODUCTION

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.

EXTENSIVE M-TRAY MODULAR ROOFS

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

- Sedums;
- Sedum and wildflowers;
- Wildflowers only.



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
- Overseed poor growth areas if required
- Check irrigation system (if applicable) and replace timer batteries

Autumn schedule

- Remove weeds by hand pulling only
- Clear debris from drainage outlets
- Generally, inspect vegetation area and monitor poor growth areas
- Overseed poor growth areas if required
- Check irrigation system (if applicable) and drain down

GENERAL POINTS

Sedum

Sedum is a unique plant in that its metabolism is reversed from most other plants. Sedum closes its stamen 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 'shrive' back then this is a sign of a problem and in the main lack of water. Irrigation must be applied to reverse this and the levels of water checked for several weeks until the sedum has recovered.



Wildflowers

Wildflowers are weeds and weeds are wildflowers and so care must be taken during maintenance NOT to pull out healthy and desired plants. Wildflowers by their nature thrive on poor soils where there is little competition however they are more vulnerable to drought. Drying of stems and leaves will be seen through hot dry periods and although irrigation can be applied it is not a requirement as the 'stressed' plants will flower and seed to propagate themselves and will often recover with the onset of rain.



Wallbarn can advise and assist on all aspects of scoping, installing and maintaining your green roof project.

Just pick up the phone, ask a question using the live chat facility on this site or send us an email at info@wallbarn.com and we'll get back to you next working day at the latest.