



16 MARCH 2022 – ON LINE

ALICIA VILLAZÁN CABERO
VALLADOLID CITY COUNCIL



URBAN GREENUP WEBINARS SINGULAR GREEN INTERVENTIONS


Ayuntamiento de
Valladolid

valladoli+D
adelante
AGENCIA DE INNOVACIÓN
Y DESARROLLO ECONÓMICO
DE VALLADOLID

This project has received funding from
the European Union's Horizon 2020
research and innovation programme
under grant agreement No 730426





AGENDA

- HORIZONTAL GREEN INFRASTRUCTURE
- VERTICAL GREEN INFRASTRUCTURE
- URBAN GARDEN BIOFILTER
- POLLINATOR'S MODULES



RENATURING INTERVENTIONS IN VALLADOLID

21

42

Table 4: Interventions included in each Valladolid Sub-Demo

33	RE-NATURING URBANIZATION	WATER INTERVENTIONS	SINGULAR GI	9 NON TECHNICAL INTERVENTIONS
Sub-Demo A	VAc1- New green cycle lane	VAc8- SUDs for green bike lane	VAc15 - Cycle-pedestrian green paths	Common non-technical interventions: VAc37, 38, 39, 40, 41 & 42
	VAc2- Planting 1,000 trees		VAc16- Smarts soils as substrate	
	VAc3- Tree shady places		VAc19- Natural pollinator's mod.	
	VAc6- 3 Green Resting areas		VAc22 - Green Noise Barriers.	
Sub-Demo B	VAc4- Shade and cooling trees	HORIZONTAL AND VERTICAL GREEN INFRASTRUCTURE GARDEN BIO-FILTER	VAc17- Smarts soils as substrate.	Common non-technical interventions: VAc37, 38, 39, 40, 41 & VAc42
			VAc20- Compacted Pollinator's mods.	
			VAc23 - Green Noise Barriers.	
			VAc24 - Vertical mobile garden.	
			VAc25 - Green Façade.	
			VAc26 - Electro wetland Roof.	
			VAc27 - Green Covering Shelter.	
			VAc28 - Green Roof.	
			VAc29 - Green Shady Structures.	
			VAc30 - Urban Garden Bio-Filter.	
Sub-Demo C	VAc5- 250 trees to re-naturing parking	VAc9- SUDs (re-naturing parking)	VAc18 - Smarts soils as substrate	VAc34: Educational path in VAc13
		VAc10- Rain gardens	VAc19, 21-Natural pollinator's mod.	VAc35: Educational path in VAc11
		VAc12- Green filter area	VAc20 - Compacted Pollinator's mod	VAc36 - Urban Farming Educational activities.
		VAc11- Floodable Park	VAc31 - Urban orchards	Common non-technical interventions: VAc37, 38, 39, 40, 41 & VAc42
	VAc7- Urban Carbon Sink	VAc14- Parking Green Pavement	VAc32 - Community composting.	
			VAc33 - Small-scale urban livestock.	

HORIZONTAL GREEN INFRASTRUCTURE

- *Green covering shelter*
- *Green roof*
- *Green canopies*



VAc27 - Green covering shelter in Plaza España.

GREEN ROOF IN ESPAÑA SQ

Green area 488 m²





Plant cover with different species of the Sedum genus that allow staggered flowering from May to September

TopSedum

Sedum album, Sedum acre, Sedum spurium, Sedum hispanicum, Sedum montanum



GREEN ROOF EX ANTE

MUNICIPAL MARKET “EL CAMPILLO”

- *Comprehensive roof renovation (August 2020)*
- *Two types of substrates for plants.*
- *Irrigation water captured from the phreatic level.*



Municipal market El Campillo



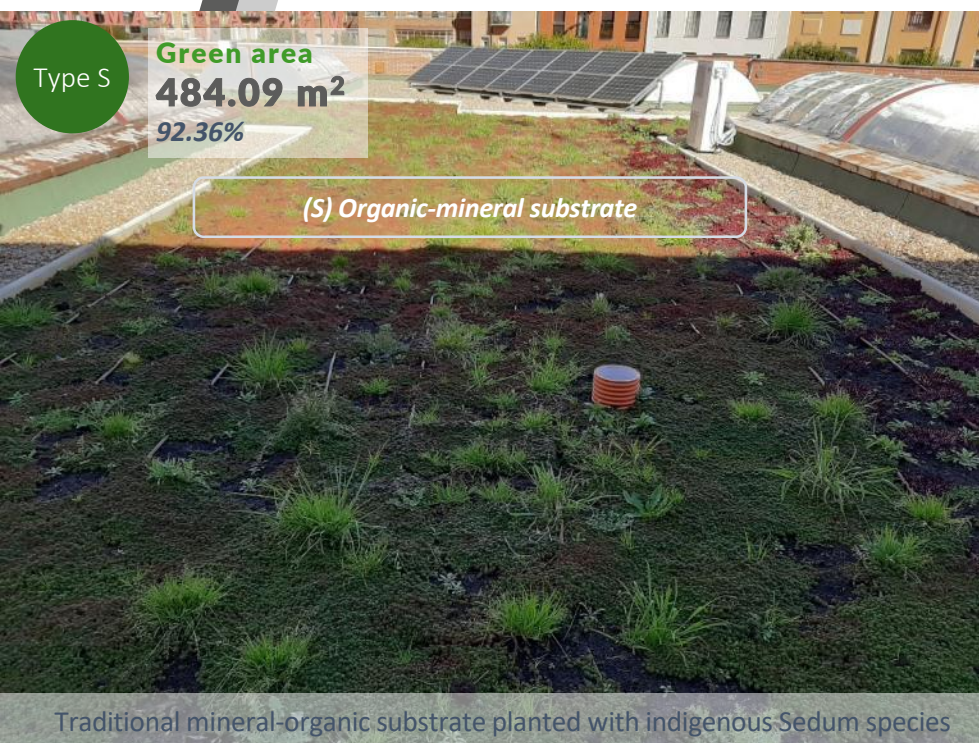
Market roof before the intervention



Green area 524,09 m²

GREEN ROOF in El Campillo market

Panoramic view of the Green Roof of the Municipal Market of El Campillo (February 2021)



Plants: Two species of native Sedum

SANTA MARÍA STREET EX ANTE SCENARIO



Santa María Street in Valladolid – before the Green canopies (2020)

Green canopies Santa María St

Green area 145,53 m²

GREEN CANOPIES in Santa María St





Green canopies Santa María St

Green canopies
Green area 145,53 m²

Selection of species seeded



Salvia officinalis



Gypsophila repens



Aubrieta hybrida



Arabis alpina sb. caucasica

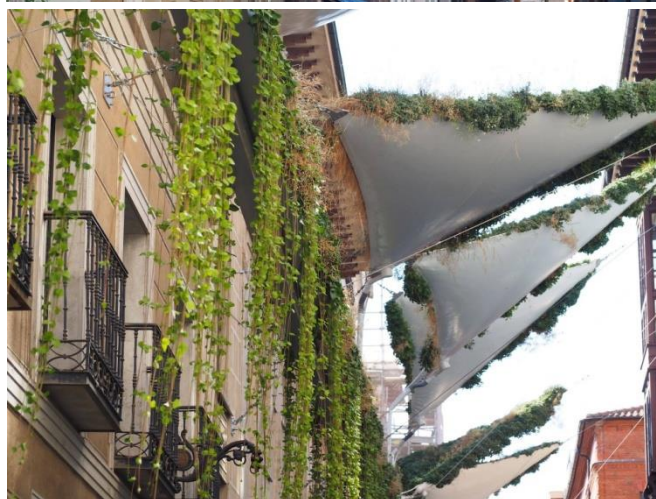


Cymbalaria muralis

Flowered (May 2021)



Green curtain (August 2021)



Biodiversity detail
(Summer 2021)



Savage (Summer 2021)

VERTICAL GREEN INFRASTRUCTURE

- *Green façade*
- *Vertical mobile gardens*
- *Green noise barriers*



Vertical garden in a building

BUILDING FAÇADE EX ANTE



El Corte Inglés

VAc25 - Green façade

Green wall
Green area 351,05 m²

El Corte Inglés

Public-private collaboration

Designed by Singular Green architects.

Agreed between Valladolid City Council and El Corte Inglés

VAc24 - Vertical mobile garden

PLAZA ZORRILLA

Green area 12.07 m²

The postcard of the city of Valladolid



VEGETAL SCULPTURE

50% Ray grass inglés 50% Poa pratensis

Vegetable sculpture: VALLADOLID letters located in Plaza Zorrilla (June 2020)

VAc24 - Vertical mobile garden

Cathedral of Valladolid



Green area 12.92 m²

PLAZA PORTUGALETE

● VERTICAL GARDEN WITH BENCH

Vertical garden module with bench in Plaza Portuguesa

VAc24 - Vertical mobile garden

Santiago Street

Green area 12.92 m²

SANTIAGO STREET

Landscaped module with bench in Santiago street (in front of the Las Francesas Convent)



VERTICAL GARDEN WITH BENCH



14 FRAMES

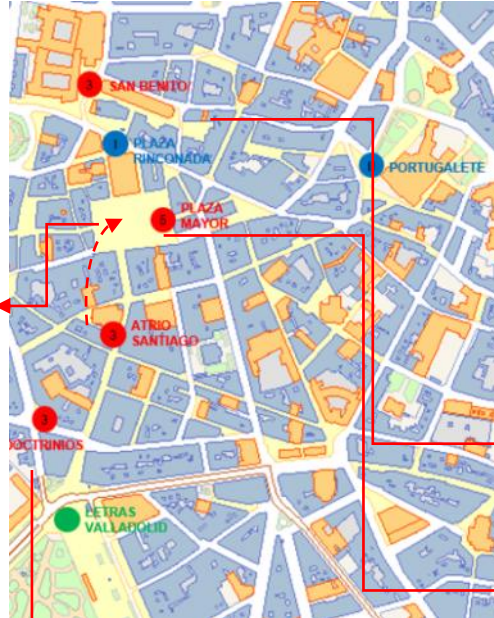
Green area 1.20 m²/ VMG
= 16.8 m²

Green area 54.71 m²

● GREEN STACKABLE FRAMES



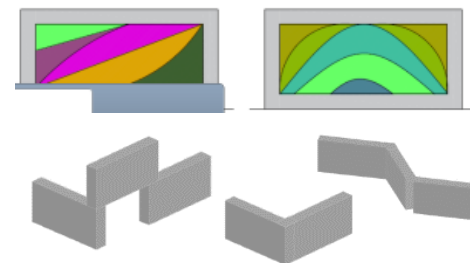
JVM en Plaza Mayor (5 units)



JVM en San Benito Sq (3 units)



JVM en María de Molina St (3 units)



- Anchored to each other to avoid risk of falls: vandalism, displacement.
- Fully mobile.
- Manually watered.



JVM en Plaza Mayor (3 units) - reubicados

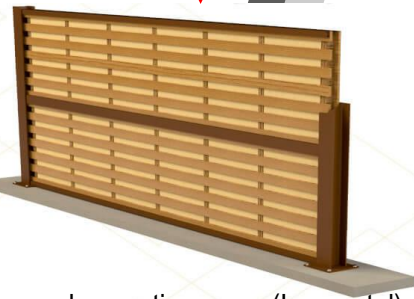


VAc22-23 Green noise barriers



HOSPITAL MILITAR AVENUE

- *Implementation February 2022 - Delays due to lack of materials*



wood acoustic screen (Insametal)

CARTIF
12h-13h



Trees

VALLADOLID
8h-9h

Housing
(portals & garages)

Offices & Health services

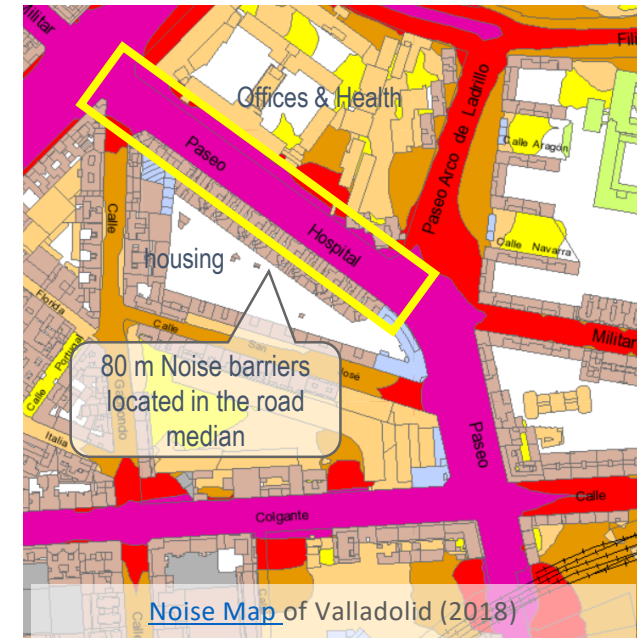
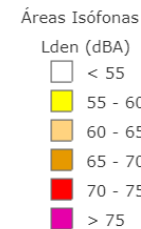
Traffic signals

EX ANTE: Median of Paseo Hospital Militar

[TECHNOLOGY CENTRE] **CARTIF** Monitoring noise reduction



Sound level
meter



Noise Map of Valladolid (2018)

Psychological KPI	CH0901 NOISE REDUCTION	(dB(A))	Measuring equipment (sound level meter) and software Predictor Type 7810 Brüel & Kjaer; Cadna noise model software	Sound level meter (CAR, VAL)
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IMPLEMENTATION IN THE MEDIAN OF HOSPITAL MILITAR AVENUE

- **Green area**
285,70 m²
60%
- **Wood & pillars**
194,30 m²
40,5%

Green area 285 m²

L*H 80 m*3 m



IMPLEMENTATION IN THE MEDIAN OF HOSPITAL MILITAR AVENUE



Green noise barriers in Hospital Militar Avenue (February 2022)

Constructive detail



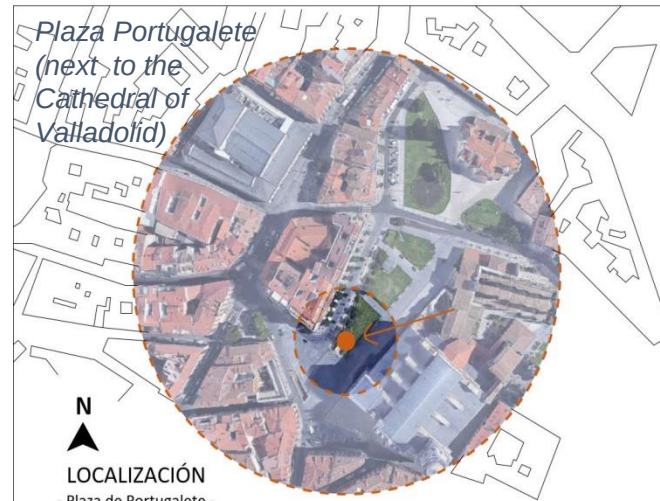


SINGULAR GREEN INFRAESTRUCTURE

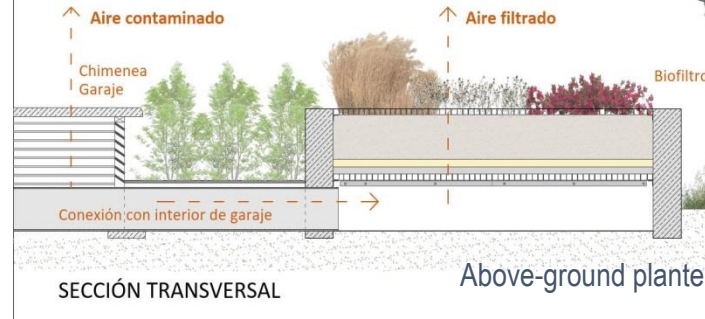
• *Urban garden biofilter*



Illustrative prototype (CARTIF)



N
LOCALIZACIÓN
- Plaza de Portugalete -

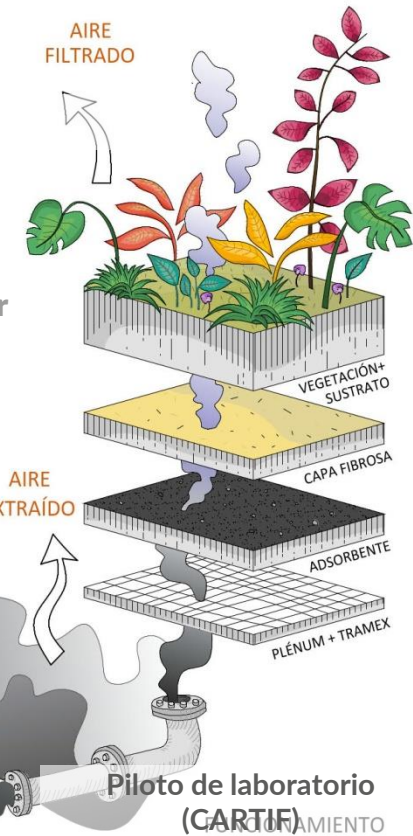


Garden BioFilter Design

Urban garden bio-filter
Green area 10,6 m²

Garden
Bio-filter

Clean air



Underground parking
In Portugalete Square

Polluted
air extractor

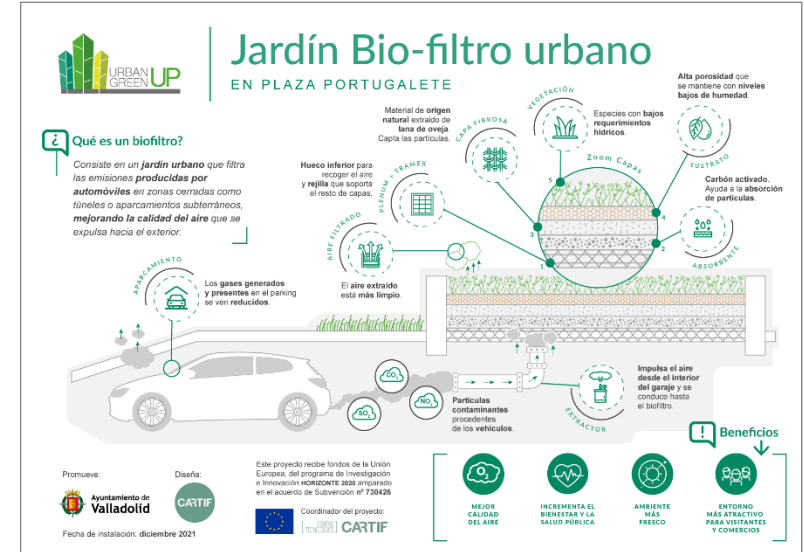


VAc30 Urban garden bio-filter

[TECHNOLOGY CENTRE] CARTIF



Biofilter in Portugalete Square (December 2021)



Vandalism (graffitti)
(Dec 2021)

POLLINATORS' MODULES

- *Compacted and Natural PM*



Ayuntamiento de
Valladolid



POLLINATOR'S MODULES Biodiversity

Conceptual Design

Bees, bumblebees, butterflies,
flowering flies, beetles



CARTIF

5 m²/module:
3 flowerpots

Compacted Pollinators
modules (12 ud.)

VAc20 Compacted pollinator's modules

Lavender,
rosemary



Smart Soil as
substrate

Bugs hotel

Water source

9 m²/module:
4,5 x 2 m

Natural pollinator's
modules (21 ud.)

VAc19+VAc21 Natural pollinator's modules

*Planning your garden –
think like a pollinator.*

Go Native. Pollinators are "best" adapted to local, native plants, which often need less water than ornamentals.

Bee Bountiful. Plant big patches of each plant species for better foraging efficiency.

Bee Showy. Flowers should bloom in your garden throughout the growing season. Plant willow, currant, and Oregon grape for spring and after, rabbit brush and goldenrod for fall flowers.

Bee Patient. It takes time for native plants to grow and for pollinators to find your garden, especially if you live far from wild lands.

Bee Gentle. Most bees will avoid stinging and use that behavior only in self-defense. Male bees do not sting.

CHEMICAL FREE GARDEN

Bee Chemical Free. Pesticides and herbicides kill pollinators.

Bee Sunny. Provide areas with sunny, bare soil that's dry and well-drained, preferably with south-facing slopes.

Bee Honey. Make small piles of branches to attract butterflies and moths. Provide hollow twigs, rotten logs with wood-boring beetle holes and bumblebees and leaf stumps, old rodent burrows, and fallen plant material for nesting bees. Leave dead or dying trees for woodpeckers.

Bee Friendly. Create pollinator-friendly gardens both at home, at schools and in public parks. Help people learn more about pollinators and native plants.

Bee a little messy. Most of our native bee species (70%) nest underground so avoid using weed cloth or heavy mulch.

of flowering species with abundant pollen and nectar and specific plants for feeding butterfly and moth caterpillars.

Suelo inteligente. 50 cm espesor, y remate 10 cm de corteza de pino

Tierra de brezo. 50 cm espesor y remate 10 cm corteza de pino

Separador y limitador de madera 14,5x7,0 cm

Propuesta de distribución

10 m²/module: 4 x 2,5 m

Two types of soil

Selected vegetal species

2,5 m

Wood border

Separador y limitador de madera 14,5x7,0 cm

4 m

Technical project Proposal

Technical project
"Green corridor"
August 2020

6
units15
units

Location 21 units along the
Green corridor

2 ud	Sj: <i>Spartium junceum</i>
3 ud	Sch: <i>Santolina chamaecyparissus</i>
4 ud	Ro: <i>Rosmarinus officinalis postratus</i>
4 ud	L: <i>Lavandula spp</i>
2 ud	Rs: <i>Retama sphaerocarpa</i>
6 ud	Tm: <i>Thymus mastichina</i>
4 ud	Cl: <i>Cistus ladanifer</i>
4 ud	Ca: <i>Cistus albidus</i>
8 ud	Ec: <i>Erica cinerea</i>
2 ud	Ea: <i>Erica arborea</i>
2 ud	Sv: <i>Syringa vulgaris</i>
3 ud	Ps: <i>Prunus spinosa</i>
4 ud	Rc: <i>Rosa canina</i>
2 ud	Cm: <i>Crataegus monogyna</i>
2 ud	Sn: <i>Sambucus nigra</i>

VAc19-21 Natural Pollinator's Modules

- *Construction of the NPM ongoing (February 2022) – Green corridor **on works***



Construction of the Natural Pollinator's Modules in the Green corridor
(Milenio Square) (VAc19)



Pollinato
r's
modules

Construction of the Natural Pollinator's Modules in Parque
Alameda orchards (VAc21) February 2022

Technical project Proposal



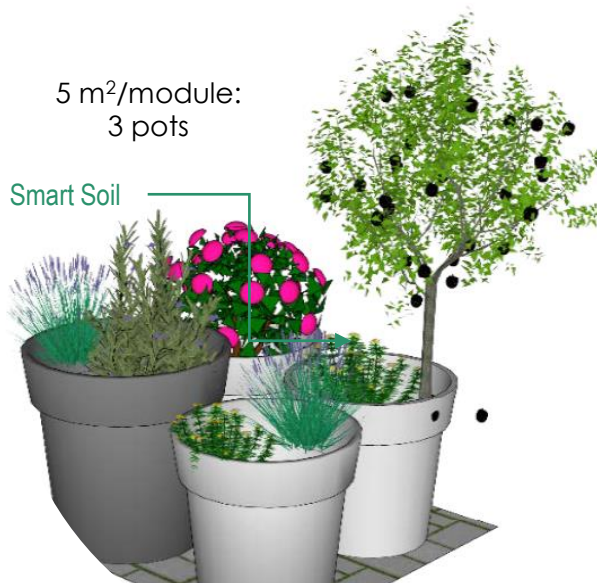
Large pots purchased (VAc20) February 2022

- **Political** selection of colours.

Pollinator's modules

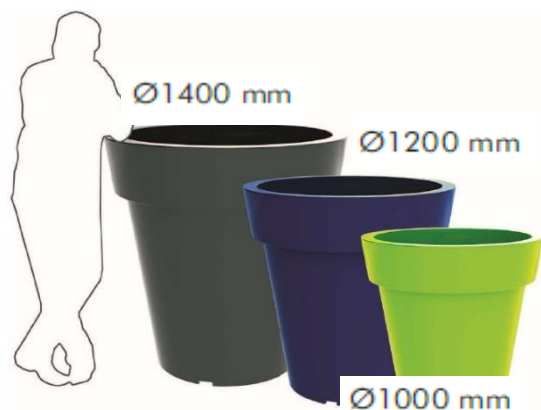
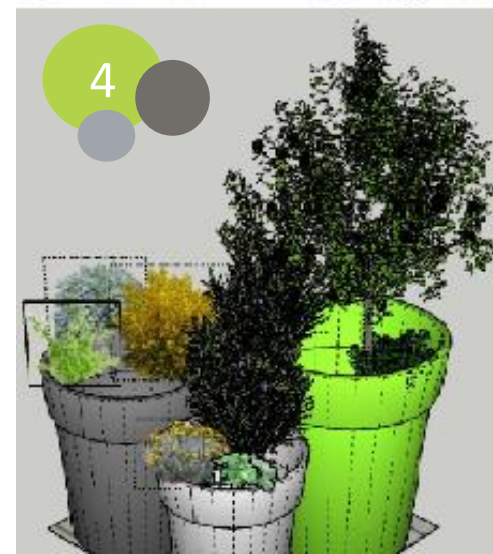
5 m²/module:
3 pots

Smart Soil



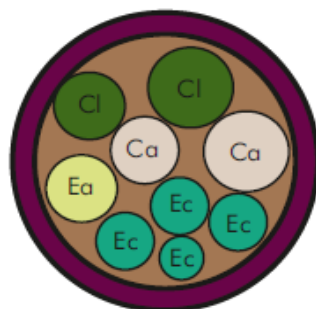
VAc20 Compacted Pollinator's Modules (13 units)

The Compacted Pollinator Module is a large container pot group that creates several layers of different plants designed to attract pollinators and biodiversity, providing refuge and feeding (water and food), allocated in complete mobile systems.



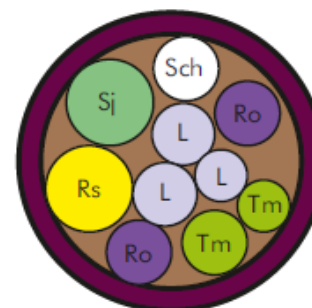
- Resistant and easy to move to different locations.
- Selection and installation of native and anti-allergic species (*Lavandula latifolia*, *Rosmarinus officinalis*) with different flowering periods, surrounding vegetation and accessibility for pollinators.

MEZCLA 1.1: Ø1200 mm



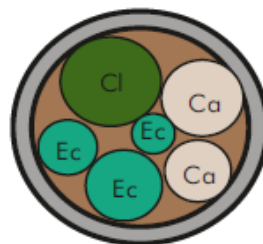
Cl	<i>Cistus ladanifer</i>
Ca	<i>Cistus albidus</i>
Ec	<i>Erica cinerea</i>
Ea	<i>Erica arborea</i>

MEZCLA 2: Ø1200 mm



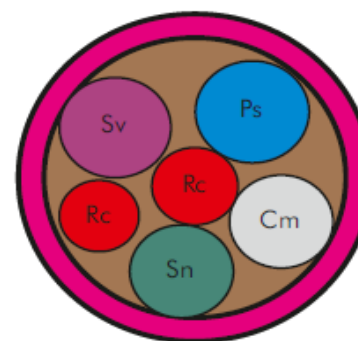
Sj	<i>Spartium junceum</i>
Sch	<i>Santolina chamaecyparissus</i>
Ro	<i>Rosmarinus officinalis postratus</i>
L	<i>Lavandula spp</i>
Rs	<i>Retama sphaerocarpa</i>
Tm	<i>Thymus mastichina</i>

MEZCLA 1.2: Ø1000 mm

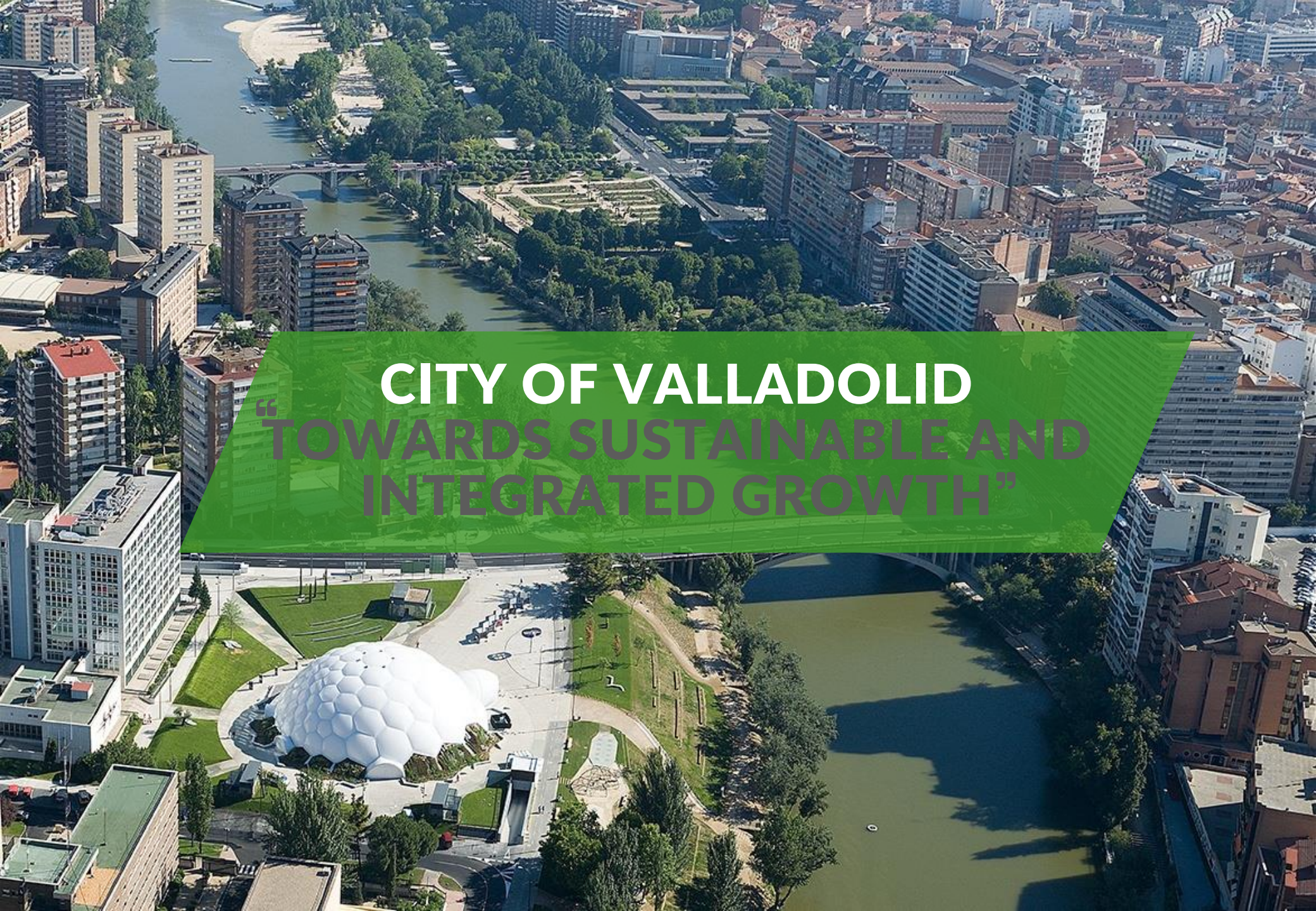


Cl	<i>Cistus ladanifer</i>
Ca	<i>Cistus albidus</i>
Ec	<i>Erica cinerea</i>
Ea	<i>Erica arborea</i>

MEZCLA 3: Ø1400 mm



Sv	<i>Syringa vulgaris</i>
Ps	<i>Prunus spinosa</i>
Rc	<i>Rosa canina</i>
Cm	<i>Crataegus monogyna</i>
Sn	<i>Sambucus nigra</i>

An aerial photograph of Valladolid, Spain, showing a dense urban landscape with numerous multi-story apartment buildings. A river, the Tago, flows through the city, with a bridge crossing it in the upper left. In the lower left, a large, white, geodesic dome structure is visible, surrounded by green spaces and parking areas. A green banner with white text is superimposed over the center of the image.

CITY OF VALLADOLID

“TOWARDS SUSTAINABLE AND INTEGRATED GROWTH”



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THANK YOU FOR YOUR ATTENTION

VALLADOLID CITY COUNCIL

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WP2 VALLADOLID DEMONSTRATION TEAM



Fundación Centro de las Nuevas Tecnologías del Agua - CENTA
CONSEJERÍA DE AGRICULTURA, GANADERÍA,
PESCA Y DESARROLLO SOSTENIBLE



LUDWIGSBURG