LEED® COMPLIANCE DOCUMENT

24/09/2019
IT04-19031801

VERDEPROFILO

GREEN WALL

Although Qualitynet believes that the products examined can contribute to a LEED® certification, it is recalled that, globally, only GBCI (Green Business Certification Inc) can assign the scores and issue a LEED certificate. Recalling that the LEED rating system certifies the building and not the materials, Qualitynet does not guarantee the achievement of the building's final score.

Dott.ssa. Iris Visentin LEED AP BD&C

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Sommario

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VERDE PROFILO

ENVIRONMENT AND SUSTAINABILITY

COMPANY PROFILE

A YOUNG ENTREPRENEUR WITH A NEW GREEN PHILOSOPHY

VERDE PROFILO® brand was born in 2008, at the behest of Stefano Laprocina, a young agronomist, profound connoisseur and lover of nature, who decides to promote and share a new green philosophy aimed at exploring the concept of green in the round. Stefano's goal is to help make the relationship between the individual and nature more spontaneous and everyday, exploiting the latter's ability to adapt to the architectural structures designed by man.

DESIGN, CREATIVITY, PASSION AND INNOVATION

These are the four principles that VERDE PROFILO® has been able to interpret in multiple design areas: not only private gardens, large public areas, hanging terraces, small metropolitan gardens and ferial settings but also elegant creations for shops, hotels, showrooms and wellness centers. At the center of every creation there is always nature, in all its elegance and vitality, capable of involving and arousing emotions in those who want to experience green as an integral part of their existence.

Our VERTICAL GARDENS system allows you to furnish indoor and outdoor spaces through structures on which plants are rooted, all powered by a fertigation system programmed according to the needs of the garden. The choice of vegetable essences during the design phase is carried out by our designers according to the environmental context, with particular attention to sun exposure, natural lighting and ventilation of the place, without the need for pre-cultivation.

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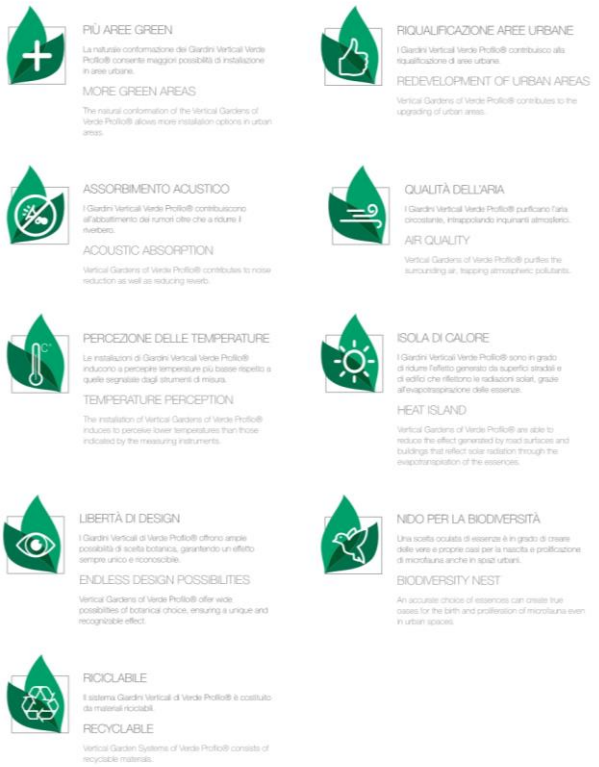

PIÙ AREE GREEN

La naturale conformazione dei Giardini Verticali Verde Profilo® consente maggiori possibilità di installazione in aree urbane.

MORE GREEN AREAS

The natural conformation of the Vertical Gardens of Verde Profilo® allows more installation options in urban areas.

RIQUALIFICAZIONE AREE URBANE

I Giardini Verticali Verde Profilo® contribuisco alla riqualificazione di aree urbane.

REDEVELOPMENT OF URBAN AREAS

Vertical Gardens of Verde Profilo® contributes to the upgrading of urban areas.

ASSORBIMENTO ACUSTICO

I Giardini Verticali Verde Profilo® contribuiscono all'abbattimento dei rumori oltre che a ridurre il riverbero.

ACOUSTIC ABSORPTION

Vertical Gardens of Verde Profilo® contributes to noise reduction as well as reducing reverb.

QUALITÀ DELL'ARIA

I Giardini Verticali Verde Profilo® purificano l'aria circostante, intrappolando inquinanti atmosferici.

AIR QUALITY

Vertical Gardens of Verde Profilo® purifies the surrounding air, trapping atmospheric pollutants.

PERCEZIONE DELLE TEMPERATURE

Le installazioni di Giardini Verticali Verde Profilo® riducono a percepire temperature più basse rispetto a quelle segnalate dagli strumenti di misura.

TEMPERATURE PERCEPTION

The installation of Vertical Gardens of Verde Profilo® induces to perceive lower temperatures than those indicated by the measuring instruments.

ISOLA DI CALORE

I Giardini Verticali Verde Profilo® sono in grado di ridurre l'effetto generato da superfici stradali e di edifici che riflettono le radiazioni solari, grazie all'evapotraspirazione delle essenze.

HEAT ISLAND

Vertical Gardens of Verde Profilo® are able to reduce the effect generated by road surfaces and buildings that reflect solar radiation through the evapotranspiration of the essences.

LIBERTÀ DI DESIGN

I Giardini Verticali di Verde Profilo® offrono ampie possibilità di scelta botanica, garantendo un effetto sempre unico e riconoscibile.

ENDLESS DESIGN POSSIBILITIES

Vertical Gardens of Verde Profilo® offer wide possibilities of botanical choice, ensuring a unique and recognisable effect.

NIDO PER LA BIODIVERSITÀ

Una scelta oculata di essenze è in grado di creare delle vere e proprie oasi per la nascita e proliferazione di microfauna anche in spazi urbani.

BIODIVERSITY NEST

An accurate choice of essences can create true oases for the birth and proliferation of microfauna even in urban spaces.

RICICLABILE

Il sistema Giardini Verticali di Verde Profilo® è costituito da materiali riciclabili.

RECYCLABLE

Vertical Garden Systems of Verde Profilo® consists of recyclable materials.

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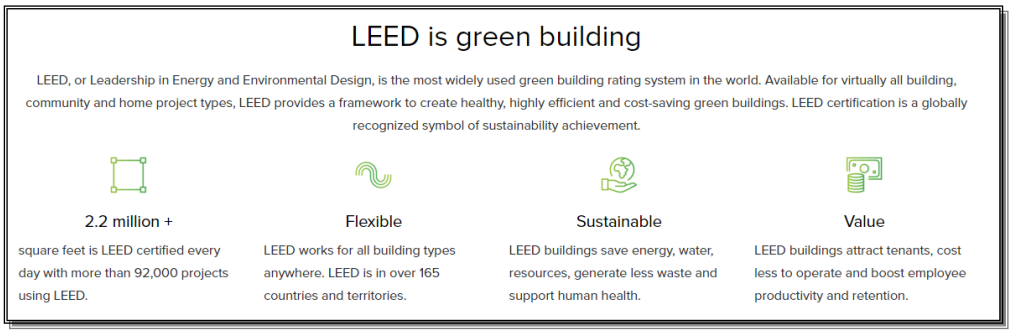
LEED® RATING SYSTEM

Sources: USGBC, GBC ITALIA

LEED® - Leadership in Energy and Environmental Design - is a certification system for buildings that is created on a voluntary basis and is applied in over 140 countries worldwide. The LEED standard was born in America by U.S. Green Building Council (USGBC), a non-profit association founded in 1993, which currently has more than 20,000 members and whose aim is to promote and develop a global approach to sustainability, acknowledging virtuous performance in key areas of health human and environmental.

The LEED® standards, developed by USGBC indicate the requirements to build environmentally sustainable buildings, both from the energy point of view and from the point of view of the consumption of all the environmental resources involved in the realization process.

LEED® is a voluntary and consensus-based system for the design, construction and management of sustainable buildings and high performance territorial areas that is developing more and more internationally; it can be used on any type of building and promotes an integrated design system that covers the entire building.



www.usgbc.org

The certification is an independent third party verification of the performance of an entire building (or part of it) and / or urban areas. The internationally recognized LEED® certification states that a building is environmentally friendly and that it is a healthy place to live and work.

Working on the entire process, from the design to the actual construction, LEED® requires a holistic approach, otherwise the objectives will not be achieved. Only with a wide effort of integrated planning and coordination is it possible to create a harmonious building in all the areas mentioned above.

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The competitive advantages for those who adopt LEED® standards, be they professionals or companies, are identifiable above all in the great final quality of the building (building), in the considerable savings in management costs that these buildings allow to obtain if compared with traditional buildings and in the certification by a third party.

The LEED® certification, in fact, provides the market with a shared approach, on which to base the choices and a measurable standard for each aspect treated.

The LEED® rating system is structured in a set of protocols (manuals) according to the type of building to be certified. We will therefore have a protocol that certifies new constructions and major renovations (LEED Nuove Costruzioni, LEED NC, LEED BUILDING DESIGN AND CONSTRUCTION LEED BD + C), a protocol for school buildings (LEED FOR SCHOOLS), a protocol that certifies retail and the interiors of a building (LEED COMMERCIAL INTERIOR and LEED RETAIL), a protocol that certifies existing buildings (LEED EXISTING BUILDING OPERATION AND MAINTENANCE, LEED EBOM), a protocol that certifies sets of buildings, eg neighborhoods (LEED FOR NEIGHBORHOOD), and so on.

The setting of all these protocols is the same, in the sense that they are all organized in the same areas or chapters, which are:

- Localization and Transport (LT)
- Sustainable Sites (SS)
- Water Efficiency (WE)
- Energy and Atmosphere (EA)
- Materials and Resources (MR)
- Indoor Air Quality (EQ)

For the sake of completeness, there are two other areas / chapters, which concern aspects that are more related to the certification process:

- Regionality: more credit is given (points) to credits in certain geographical areas due to the strong relationship between the territorial context and the credit requirements;
- Design innovation: aspects that or in the specific protocol are not taken into account but are present in the other protocols, or a higher score is given for exemplary performance in some of the protocol credits. Everything is regulated precisely by the text of the manuals.

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All these areas / chapters contain the prerequisites and credits. The prerequisites are mandatory and do not give points, while the credits can be chosen or not by the design team but they are the ones that give the score, which must be achieved to obtain the certification level defined as a certification objective.

The prerequisites and credits concern all aspects of a building, from the installations, to the details of the design, to the permeability of the land, to the consumption of drinking water, to the relationship of the site with the servants near the building or to the availability of public transport. Some of these also concern materials, in the sense that the materials have characteristics that help the building comply with certain requirements defined in the prerequisites and protocols. What was done in this document, in the first instance, was to identify the possible credits that could concern the VERDE PROFILO products considered in the project, on the other to verify their characteristics and documentation in line with the requirements in the requirements. The credits to which the products can contribute are explained in the following paragraphs.

LEED® rating system certifies the building, does not certify the individual products or building components, but the latter can help meet the requirements of the protocol and consequently obtain the relative scores for the building.

This also implies that the product CANNOT have a score, the score is always and only of the building, but it can help the building get the score.

As already mentioned, the excellence of VERDE PROFILO in relation to LEED® credits will be illustrated in the following paragraphs. As described earlier in the text, all the protocols are structured in the same areas, and for the most part the credits are the same or similar. In the present work, the LEED BD + C V4 protocol was taken as reference for clarity and to avoid unnecessary repetitions (and which could cause confusion), inserting all the credits of this protocol that could concern the products taken into consideration by this document.

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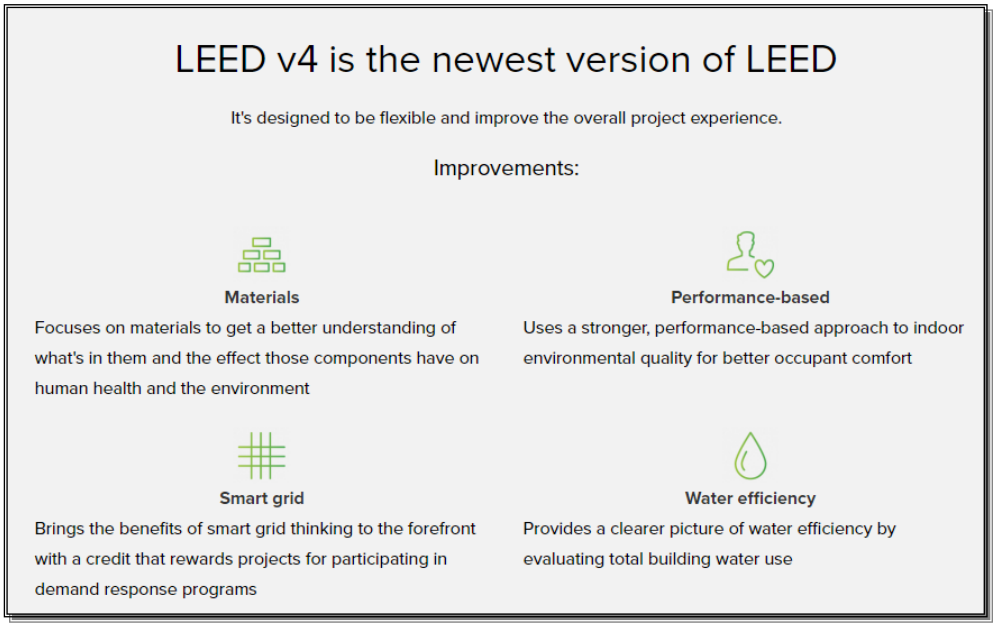

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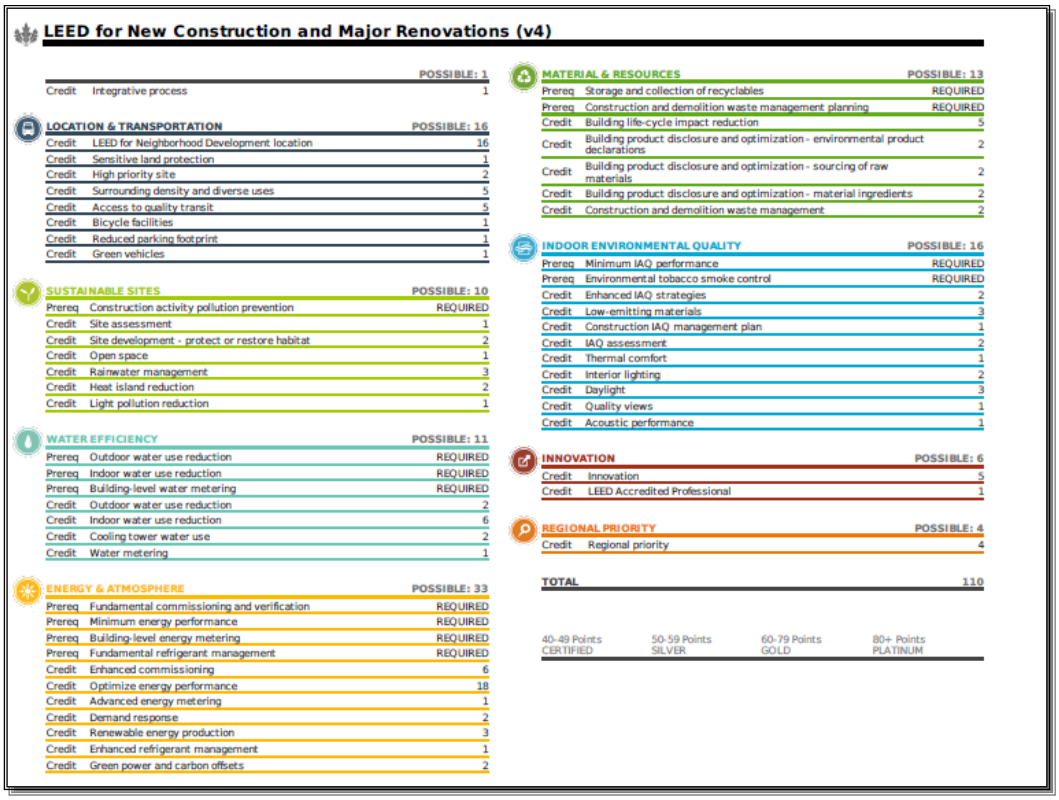
VP MODULO AND LEED® V4 CREDITS

In the following check lists we highlight the credits to which VERDE PROFILO's VP MODULO can contribute:



LEED for New Construction and Major Renovations (v4)

	POSSIBLE: 1	
Credit	Integrative process	1
	LOCATION & TRANSPORTATION	**POSSIBLE: 16**
Credit	LEED for Neighborhood Development location	16
Credit	Sensitive land protection	1
Credit	High priority site	2
Credit	Surrounding density and diverse uses	5
Credit	Access to quality transit	5
Credit	Bicycle facilities	1
Credit	Reduced parking footprint	1
Credit	Green vehicles	1
	SUSTAINABLE SITES	**POSSIBLE: 10**
Prereq	Construction activity pollution prevention	REQUIRED
Credit	Site assessment	1
Credit	Site development - protect or restore habitat	2
Credit	Open space	1
Credit	Rainwater management	3
Credit	Heat island reduction	2
Credit	Light pollution reduction	1
	WATER EFFICIENCY	**POSSIBLE: 11**
Prereq	Outdoor water use reduction	REQUIRED
Prereq	Indoor water use reduction	REQUIRED
Prereq	Building-level water metering	REQUIRED
Credit	Outdoor water use reduction	2
Credit	Indoor water use reduction	6
Credit	Cooling tower water use	2
Credit	Water metering	1
	ENERGY & ATMOSPHERE	**POSSIBLE: 33**
Prereq	Fundamental commissioning and verification	REQUIRED
Prereq	Minimum energy performance	REQUIRED
Prereq	Building-level energy metering	REQUIRED
Prereq	Fundamental refrigerant management	REQUIRED
Credit	Enhanced commissioning	6
Credit	Optimize energy performance	18
Credit	Advanced energy metering	1
Credit	Demand response	2
Credit	Renewable energy production	3
Credit	Enhanced refrigerant management	1
Credit	Green power and carbon offsets	2
	MATERIAL & RESOURCES	**POSSIBLE: 13**
Prereq	Storage and collection of recyclables	REQUIRED
Prereq	Construction and demolition waste management planning	REQUIRED
Credit	Building life-cycle impact reduction	5
Credit	Building product disclosure and optimization - environmental product declarations	2
Credit	Building product disclosure and optimization - sourcing of raw materials	2
Credit	Building product disclosure and optimization - material ingredients	2
Credit	Construction and demolition waste management	2
	INDOOR ENVIRONMENTAL QUALITY	**POSSIBLE: 16**
Prereq	Minimum IAQ performance	REQUIRED
Prereq	Environmental tobacco smoke control	REQUIRED
Credit	Enhanced IAQ strategies	2
Credit	Low-emitting materials	3
Credit	Construction IAQ management plan	1
Credit	IAQ assessment	2
Credit	Thermal comfort	1
Credit	Interior lighting	2
Credit	Daylight	3
Credit	Quality views	1
Credit	Acoustic performance	1
	INNOVATION	**POSSIBLE: 6**
Credit	Innovation	5
Credit	LEED Accredited Professional	1
	REGIONAL PRIORITY	**POSSIBLE: 4**
Credit	Regional priority	4
	TOTAL	110

40-49 Points CERTIFIED | 50-59 Points SILVER | 60-79 Points GOLD | 80+ Points PLATINUM

This chapter describes the way in which VERDE PROFILO's VP MODULO analyzed in this document can contribute to the selected LEED V4 credits.

This logo, called the Product Badge, represents a graphic summary.[1].

[1] *The Product Badge shows the same identification codes as this document ("IT04-19031801") in order to create a unique identification. It also highlights the fact that the Product Badge is reported for the LEED® System, as it is designed and created to be in line with the references, policies and rules of said System.*

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SUSTAINABLE SITES AREA

The choice of the site where the building is to be built is one of the fundamental components of building sustainability. The environmental restoration of building damage typically requires several years of work.

The Sustainability section of the Site deals with the environmental aspects related to the construction site with particular reference to the management of the external areas and the relationship between the building and the surrounding environment. The LEED credits Sustainability of the Site for New Construction promote the following measures:

- Selection and development of the site;
- Reduction of emissions associated with transport
- Creation of a sustainable landscape
- Protection of local ecosystems
- Management of rainwater runoff
- Reduction of the heat island effect for outdoor flooring and roofing
- Reduction of light pollution.

The credits of LEED NC V4 to which VERDE PROFILO's VP MODULO can contribute are:

- • SSc2 Site Development — Protect or Restore Habitat
- • SSc4 Rainwater Management
- • SSc5 Heat Island Reduction
- • SSc9H Place of Respire (only Healthcare)

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SSc2 Site Development—Protect or Restore Habitat

Intent: To conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity.

Verde profilo, thanks to its skills, can design a plant composition that is native, which allows to guarantee biodiversity. Below are some of the botanical selections from which VP MODULO can be composed:

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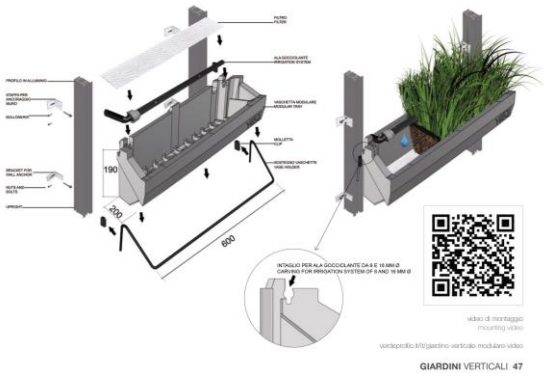
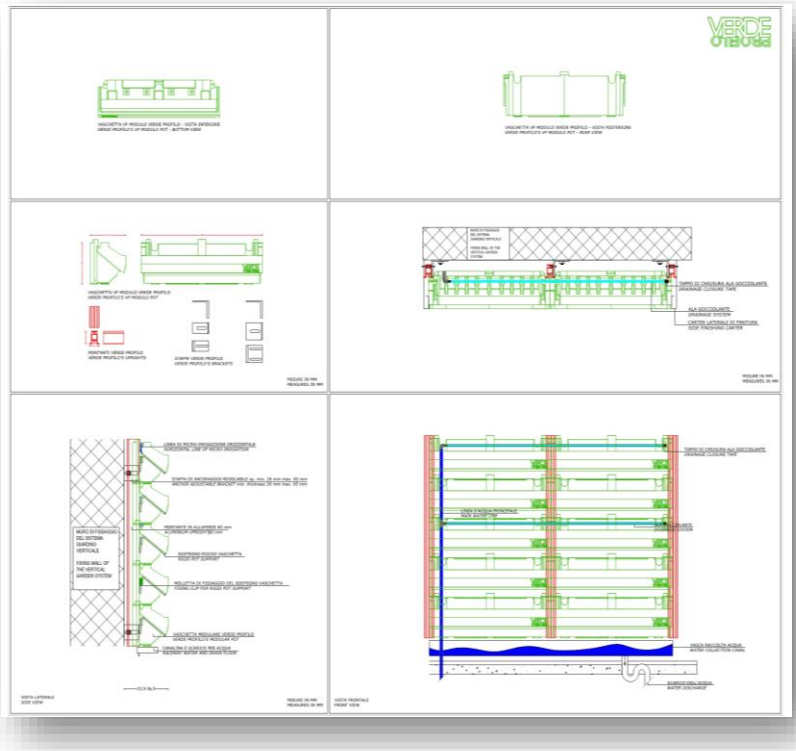
SSc4

Rainwater Management

Intent: To reduce runoff volume and improve water quality by replicating the natural hydrology and water balance of the site, based on historical conditions and undeveloped ecosystems in the region.



In the case of application in an external green wall, as can be seen in the image on the side, the shape of the module that makes up the system consists of a water reserve tank so as to reduce as much as possible water waste as well as to reduce wetting cycles by reducing standard water consumption. In this way the extra water is not dispersed in the environment, but remains available to the plant. In addition, of course, like the green roof, it can retain rainwater and reuse it for plants.



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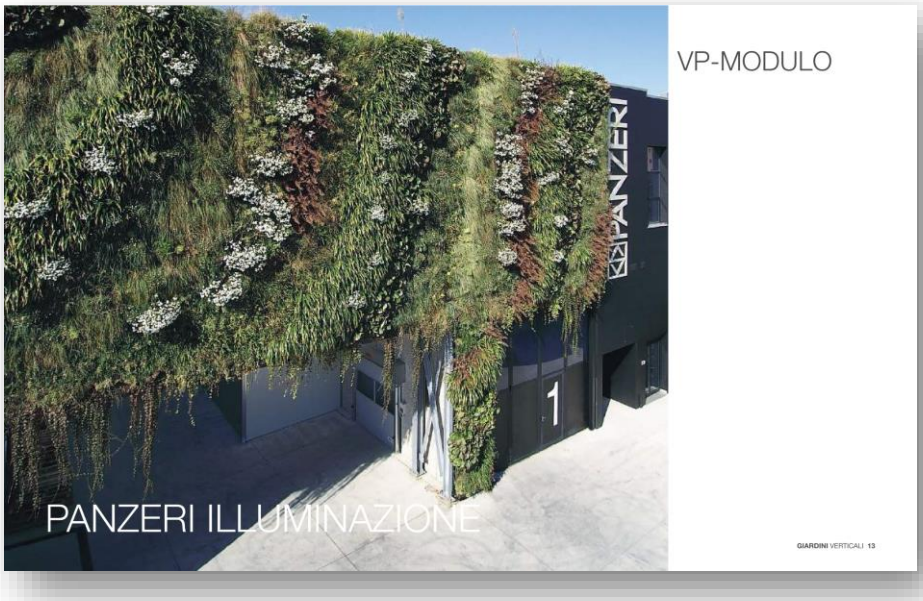
SSc5

Heat Island Reduction

Intent: To minimize effects on microclimates and human and wildlife habitats by reducing heat islands.

Despite the vertical and covered surface, the vertical garden is able to break down the heat islands by shading the wall on which it is installed.



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SSc9H

Places of Respire

(Healthcare)

Intent: To provide patients, staff, and visitors with the health benefits of the natural environment by creating outdoor places of respite on the healthcare campus.

The vertical walls, like any natural element, placed inside or outside the building are able to improve the mood of people and as scientific studies have shown, patients with a view towards natural elements recover faster , need fewer painkillers and have fewer complications after leaving the hospital (v. *Ulrich, R.S., View through a Window May Influence Recovery from Surgery, Science 224 (1984): 420–421*).

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WATER EFFICIENCY AREA

The Water Management section aims to reduce the use of drinking water, inside the building and outside the building. The solutions within the building consider reductions in the flow of taps, toilets etc. Outside the building the objective is to reduce the use of drinking water for irrigation, thus using rainwater, native vegetation, recovery of gray water, etc.

The credits of LEED NC V4 to which VERDE PROFILO's VP MODULO can contribute are:

- WEp1 Outdoor Water Use Reduction
- WEp2 Indoor Water Use Reduction
- WEc1 Outdoor Water Use Reduction
- WEc2 Indoor Water Use Reduction

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WEp1

Outdoor Water Use Reduction

Intent: To reduce outdoor water consumption.

Native vegetation systems can be developed for external walls, which therefore use reduced irrigation. Furthermore, the presence of earth inside the modules allows less frequent wetting, unlike hydroculture systems that require constant irrigation.

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WEp2

Indoor Water Use Reduction

Intent: To reduce indoor water consumption.

The collection tank inside the modules prevents water waste and therefore lower water consumption. Furthermore the system can be connected to a humidity sensor to optimize irrigation.

IMPIANTO DI FERTIRRIGAZIONE

Generalmente l'impianto tecnologico per il sistema di fertirrigazione viene alloggiato in prossimità del giardino verticale, in un locale o vano tecnico, accessibile per successivi interventi di manutenzione.
L'impianto di fertirrigazione è composto da:
attacco alla rete principale di distribuzione dell'acqua;
posizionamento di primo filtro per l'asportazione delle impurità dell'acqua;
posizionamento di serbatoio per il fertilizzante alla base del dosatore. Il dosatore viene collegato direttamente alla rete idrica e usa la pressione dell'acqua come forza motrice.
Impianto di distribuzione dell'acqua attraverso linee di ala gocciolante per la microirrigazione del tessuto.
Le linee partiranno da una linea principale posta in verticale e verranno distribuite da linee di irrigazione orizzontali posizionate a diverse altezze da terra.
Serbatoio, dosatore e filtri dovranno essere posizionati in prossimità del giardino verticale in un locale tecnico in posizione da concordare con la committenza.
Centralina computerizzata, con numero di zone adeguate all'impianto, per la gestione e la regolazione dell'impianto di ferti-irrigazione, direttamente collegata all'impianto installato.
Compresa installazione, cablaggio elettrico e collaudo.

Composizione Impianto Domotico:

- Centralina generale di comando temporizzato per la gestione delle linee di irrigazione, predisposta per controllo in remoto
- Software per il controllo dell'umidità e delle temperature
- Gestione stagionale e meteo per la regolazione dei flussi
- Dosatore automatico per la fertilizzazione
- Dosatore automatico per aggiunta di Antibatterico, Igienizzante, Funghicida e Antialga.
- Ala gocciolante inserita nei pannelli di radicazione, tagliate a misura secondo le necessità progettuali, garantendo una bagnatura totale della parete.
- Memoria degli errori e delle anomalie all'impianto per correzioni
- Controllo delle linee di irrigazione, delle elttrovalvole dell'impianto e della fertilizzazione.

Composizione Impianto Standard:

- Centralina generale di comando temporizzato per la gestione delle linee di irrigazione
- Dosatore automatico per la fertilizzazione
- Dosatore automatico per aggiunta di Antibatterico, Igienizzante, Funghicida e Antialga.
- Ala gocciolante inserita nei pannelli di radicazione, tagliate a misura secondo le necessità progettuali, garantendo una bagnatura totale della parete.

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WEp3

Building-Level Water Metering

Intent: To reduce indoor water consumption.

The system can be connected to a home automation and water metering system to optimize its use.

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ENERGY AND ATMOSPHERE AREA

The use of electricity produced from fossil fuels, such as oil, natural gas and coal, negatively affects the environment at every stage of its life cycle, starting from the extraction and transport process followed by refining and distribution activities. To reach the final consumption.

A building designed according to the criteria of sustainable agriculture addresses energy-related issues in two ways. First of all, reducing the building's energy needs: the lower the energy requirement, the less greenhouse gas is emitted to meet this requirement. Secondly, use forms of energy with less environmental impact, such as sources other than fossil fuels.

The credits of LEED NC V4 to which VERDE PROFILO's VP MODULO can contribute are:

- EA p2 Minimum Energy Perfomance
- EAc1 Optimize Energy Performance

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EAp2 Minimum Energy Performance

EAc2 Optimize Energy Performance

Intent: The purpose of this prerequisite and credit is to reach an increasing level of energy performance for buildings and project facilities, superior to the minimum values defined by current legislation and legislation, in order to reduce the economic and environmental impacts associated with excessive consumption of energy.

The prerequisite EAp2 provides the minimum energy performance requirements required for the building.

The EAc1 credit rewards the energy efficiency improvements of the building, in particular assigns a score from 1 to 18 based on the building efficiency percentage compared to the basic building (calculated according to ASHRAE regulations). The percentage is calculated by dynamically modeling the building, which takes into consideration all the building components (enclosure, plants, etc.) and site conditions (day, night, summer, winter, etc.).

The facades with vertical garden prevent overheating of the external walls exposed to the sun and the dispersion of heat from the inside, thus contributing to energy saving. Tests have been carried out to calculate the thermal resistance of the walls, an extract of the results is reported

Risultati

Impiegando i dati sopra riportati è stata ricavata la resistenza termica "R_p" del modulo di pannello:

Modello	Resistenza termica "R_p" [m² · K/W]	Resistenza termica "R_p"* [m² · K/W]
VP-MODULO con cavità chiusa	0,622 m² · K/W	**0,62 m² · K/W**

(*) valore arrotondato alla seconda cifra significativa.

Nota: la resistenza termica del pannello "R_p" può essere impiegata per determinare la trasmittanza termica "U'_w" di una muratura con installato il pannello analizzato, utilizzando la formula riportata in precedenza.

Risultati

Impiegando i dati sopra riportati è stata ricavata la resistenza termica "R_p" del modulo di pannello:

Modello	Resistenza termica "R_p" [m² · K/W]	Resistenza termica "R_p"* [m² · K/W]
VP-MODULO con cavità debolmente ventilata	0,543 m² · K/W	**0,54 m² · K/W**

(*) valore arrotondato alla seconda cifra significativa.

Nota: la resistenza termica del pannello "R_p" può essere impiegata per determinare la trasmittanza termica "U'_w" di una muratura con installato il pannello analizzato, utilizzando la formula riportata in precedenza.

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MATERIAL AND RESOURCES AREA

The Materials and Resources area is an area that considers the sustainability of the building based on the materials that were used to build it. Pursuing obtaining LEED® credits in the field of Materials and Resources (MR) can reduce the amount of waste and improve the building's environment through responsible waste management and material selection.

The credits in this section focus on VERDE PROFILO on two important issues: the environmental impact of the materials entering the building project and the minimization of disposal. With respect to the first area, he has chosen to use materials with the highest recycled content possible and adopt an internal environmental policy that is widespread at all levels through a CSR and particular attention to the chemicals used. Compared to the second area, it can support companies in the management of their waste through the use of recyclable packaging.

In version 4 of the rating system, the Materials and Resources area is the area that undergoes major changes, enhancing good practices of companies and their environmental and social responsibility.

The credits of LEED NC V4 to which VERDE PROFILO's VP MODULO can contribute are:

- MRc3 – Building product Disclosure and Optimization – Sourcing of Raw Material
- MRc3 – Building product Disclosure and Optimization – Material Ingredient
- MRc5 – Construction and Demoliton Waste Management

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MRC3

Building Product Disclosure And Optimization - Sourcing Of Raw Materials

Intent: To encourage the use of products and materials for which life cycle information is available and that have environmentally, economically, and socially preferable life cycle impacts. To reward project teams for selecting products verified to have been extracted or sourced in a responsible manner.

The materials that make up the system are completely recyclable, partly with recycled content, in particular the metal and steel components.

Following are the main components

			
Screw - Steel	Bolts - Steel	Filter	Grpver – Steel
			
Module - eps	Clip – Steel	Upright	Support

MRC4

Building Product Disclosure And Optimization – Material Ingredient

Intent: To encourage the use of products and materials for which life-cycle information is available and that have environmentally, economically, and socially preferable life-cycle impacts. To reward project teams for selecting products for which the chemical ingredients in the product are inventoried using an accepted methodology and for selecting products verified to minimize the use and generation of harmful substances. To reward raw material manufacturers who produce products verified to have improved life-cycle impacts.

It is possible to identify the chemical components present in the system up to 1000ppm.

In particular:

- a casting certificate is provided for the metal components;
- the tub is in TOTAL POLYPROPYLENE HOMOPOLYMER CAS NR 9003-070;
- non-woven fabric (non-resinated needle-punched polypropylene and needle-punched and thermocalandered polypropylene);
- ARPRO (polypropylene copolymer CAS NR 9010-79-1 and carton Black 215-609-9)

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MRC5

Construction And Demolition Waste Management

Intent: To reduce construction and demolition waste disposed of in landfills and incineration facilities by recovering, reusing, and recycling materials.

With regard to the product in question, this credit evaluates the waste material and the packaging on site during the laying and installation phases, to the extent that these are "diverted" from the landfill and reintroduced into a production cycle. Given that this information must be collected and calculated by the construction company, the role played "upstream" by VERDE PROFILO who uses recyclable packaging is important. The types of packaging used are recyclable.

The system does not produce waste, in any case all the components are recyclable. The packaging consists exclusively of Dutch carts (reusable) and PVC film that can be disposed of as plastic waste and therefore recyclable.

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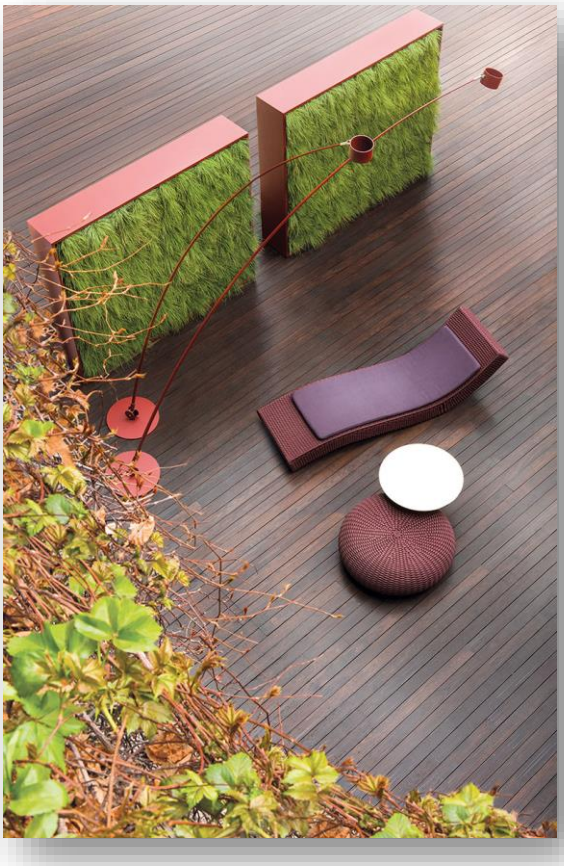
MR c9H

Design for Flexibility (Healthcare)

Intent: Conserve resources associated with the construction and management of buildings by designing for flexibility and ease of future adaptation and for the service life of components and assemblies.

The VP-MODULE walls of Verde Profilo are flexible and give freedom of movement even after installation, in fact it is possible to move the wall to other rooms after processing.

In addition to this, GREENERY is a piece of furniture that can be used to divide up spaces and can be easily moved



INDOOR ENVIRONMENTAL QUALITY AREA

To ensure the quality of the internal environment, a joint effort is required from the client, the design group, contractors, subcontractors and suppliers. Automatic sensors and individual controls to regulate temperature, humidity and ventilation can be integrated into the building system to provide an optimal indoor environment quality. Other issues regarding indoor air quality addressed by the LEED® system include verification of thermal comfort, availability and quality of natural light with access to outside views. All these issues can enhance the quality of the internal environment and optimize the confined spaces for the occupants of the building.

The credits of LEED NC V4 to which VERDE PROFILO's VP MODULE can contribute are:

- EQp3 Minimum Acoustic Performance*
- EQc1 Enhanced Indoor Air Quality Strategies
- EQc2 Low Emitting Materials
- EQc9 Acoustic Performance

**Specifico per LEED FOR SCHOOLS*

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EQp3 Minimum Acoustic Perfomance

EQc9 Acoustic Performance

Prerequisite intent is: To provide classrooms that facilitate teacher-to-student and student-to-student communication through effective acoustic design.

Credit Intent is: To provide workspaces and classrooms that promote occupants' well-being, productivity, and communications through effective acoustic design.

The prerequisite, defined specifically for schools, considers:

- HVAC background Noise
- Exterior Noise
- Reverberation Time

The credit considers:

- HVAC Background Noise
- Sound Isolation
- Reverberation Time
- Sound Reinforcement and Masking Systems

The green walls are able to improve the external and internal acoustics of the facades. Thanks to the VP-MODULE green wall systems we can combine design with efficiency by creating green sound-absorbing indoor walls.

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EQc1

Enhanced Indoor Air Quality Strategies

Intent: To promote occupants' comfort, well-being, and productivity by improving indoor air quality.

The green walls being made up of plants that carry out photosynthesis purify the air in the rooms and increase their comfort. They also contribute to the comfort of the environment by releasing moisture (evacuation) and the filters in the tanks prevent the formation of condensation and therefore microbes.

Green walls contribute to the comfort of indoor environments not only by increasing the humidity level of the air itself, but thanks to the possibility of integrating home automation systems this quality can be monitored and controlled.

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EQc2

Low Emitting Materials

Intent: To reduce concentrations of chemical contaminants that can damage air quality, human health, productivity, and the environment.

The materials used are non-emissive products (steel, metals, eps tank, small plastic components). Furthermore, the system is laid dry, and if in particular contexts it was necessary to use special adhesives and sealants, it is possible to use adhesives compliant with the criterion.

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VP MODULE AND OTHER RATING SYSTEM: THE WELL BUILDING STANDARD™

Source: www.wellcertified.com

Parallel to the interest of environmental impacts, strategies to improve human health and well-being have increased, but despite this they have played a relatively modest role in the evolution of construction standards. This is the first standard of its kind that focuses exclusively on the health and well-being of building occupants, through the definition of 100 performance metrics, design strategies and policies that can be implemented. The WELL certification of a building can lead to a built environment that helps improve nutrition, fitness, mood, sleep, comfort and user performance

For more information see the following link: https://www.wellcertified.com/

The WELL ™ rating system certifies the building, does not certify the individual products or components, but the latter can help meet the requirements of the protocol and consequently obtain the relative scores for the building.

This also implies that the product CANNOT have a score (the score is always just about the building), but it can help the building get the score.

The WELL ™ rating system certifies, as mentioned, only buildings. The products, however, can help meet the requirements of WELL ™ credits, and thus help the building obtain the scores required for certification.

The VP MODULE green walls by Verde Profilo can contribute to some of the benefits required by the protocol itself, thanks to its intrinsic characteristics.

On the following page these possible contributions are shown in the diagram.

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AIR
A01 Fundamental Air Quality
A14 Microbe and Mold Control

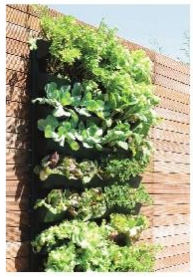
The green walls improve air quality not only thanks to the chlorophyll photosynthesis of living plant species but thanks to the possibility of integrating domotic systems this quality can be monitored and controlled. In addition to this, special filters prevent the formation of condensation and microbes

WATER
W07 Moisture Management

The tanks are equipped with a space separated by a filter that allows the collection of any excess irrigation water so that it can then be absorbed later by the plant itself. All materials are antibacterial and do not allow mold growth

NOURISHMENT
N01 Fruits and Vegetables
N08 Mindful Eating
N12 Food Production

The green walls can be defined with vegetable species typical of the garden, thus creating real vertical gardens as can be seen from the image, thus making these foods more accessible



THERMAL COMFORT
T07 Humidity Control

Green walls contribute to the comfort of indoor environments not only by increasing the humidity level of the air itself, but thanks to the possibility of integrating home automation systems this quality can be monitored and controlled

MIND
M02 Access to Nature
M07 Restorative Spaces
M09 Enhanced Access To Nature

The green walls thanks to the vegetal composition of which it is formed, guarantee the vision and the contact with natural elements inside the building, creating more effective restorative spaces

SOUND
S03 Sound Barriers
S04 Sound Absorption
S05 Sound Masking

The green walls, thanks to the vegetal composition of which it is formed, can reduce noise pollution and be acoustic plant barriers

MATERIALS
X01 Fundamental Material Precautions
X10 Volatile Compound Reduction
X12 Short-Term Emission Control

The components of the green wall system have no dangerous substances and do not emit VOCs

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CONCLUSION

QualityNet believes that VP MODULE di VERDE PROFILO can contribute to achieving the LEED certification score in the credits indicated in the following table:

LEED BD+C V 4 CREDIT	Points	Title	Features
SSc2	2	Site Development – Protect or Restore Habitat	Native vegetal composition, which guarantees biodiversity
SSc4	3	Rainwater Management	External applications: the tanks collect part of the rainwater
SSc5	2	Heat Island Reduction	External applications: shading of the covered wall
SSc9H	1	Place of Respire (Healthcare)	Vision of the green by patients with consequent benefits
WEp1	obbligatorio	Outdoor Water Use Reduction	Autochthonous vegetable composition; the tank reduces the need for irrigation (possible integration with a home automation system that optimizes the process)
WEp2	Obbligatorio	Indoor Water Use Reduction	Autochthonous vegetable composition; the tank reduces the need for irrigation (possible integration with a home automation system that optimizes the process)
WEp3	Obbligatorio	Building Level Water Metering	The system can be connected to a home automation and water metering system to optimize its use
EAp2	Obbligatorio	Minimum Energy Performance	Thermal insulation: test report with Thermal Resistance values
EAc2	1-18	Optimize Energy Performance	Thermal insulation: test report with Thermal Resistance values
MRc3	1-2	Building Product Disclosure and Optimization – Source of Raw Material	Recycled content (steel components)
MRc4	1-2	Building Product Disclosure and Optimization – Material Ingredient	List of chemicals up to 1000ppm
MRc5	1-2	Construction and demolition Waste Management	The system does not produce waste, in any case all the components are recyclable. The packaging consists exclusively of Dutch carts (reusable) and PVC film that can be disposed of as plastic waste and therefore recyclable
MRc9H	1	Design for Flexibility (Healthcare)	The walls are flexible and give freedom of movement even after installation GREENERY is a piece of furniture that can be used to divide spaces and can be easily moved
EQp3	Obbligatorio	Minimum Acoustic Performance	The green walls are able to improve the external and internal acoustics of the facades.
EQc1	1-2	Enhanced Indoor Air Quality Strategies	The green walls being made up of plants that carry out photosynthesis purify the air in the rooms and increase their comfort. The filters prevent the formation of condensation and therefore microbes. Thanks to the possibility of integrating home automation systems the air quality can be monitored and controlled
EQc2	1-3	Low Emitting Material	The materials used are non-emissive products (steel, metals, EPS tank, small plastic components). Furthermore, the system is laid dry
EQc9	1	Acoustic Performance	The green walls are able to improve the external and internal acoustics of the facades.

For more detailed information, contact the technical offices.

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