

Breathe™ Living Wall

Modular Wall Solution from DIRTT

Breathe: DIRTT walls. Clean air.

Breathe is the latest innovation in modular wall solutions from DIRTT Environmental Solutions. Breathe™ is a (patent pending) simple system for incorporating plants into DIRTT Walls. It mounts to the tile layer of the wall, can be retrofitted on existing DIRTT walls with tiles, or can be mounted to any flat, vertical building surface: gypsum, concrete, stone, etc. It is scalable and easily expanded from one panel to a monolithic wall of plants. Designers can incorporate Breathe living walls, or interior plantscapes, to bring nature indoors and beautify and detoxify interior spaces.

High levels of pollutants common in building interiors contribute to illness and lower rates of productivity in the workplace. To address toxic elements circulating in the air and render it fit for human use, most buildings condition air through a heating, ventilation and air conditioning (HVAC) system. Conditioning air requires energy, further contributing to greenhouse gas production and the cost of building operations. Plant landscapes are known to remove harmful environmental toxins found in building interiors, and can lighten the load of the HVAC system by removing many of these pollutants, resulting in less energy use in buildings. Studies confirm certain types of indoor plants reliably reduce total volatile organic compound loads by 75%, to below 100 ppb.

Natural elements have long been on the list of environmental attributes DIRTT wished to add to its Walls. In addition to its toxin-reducing properties, Breathe facilitates biophilic design – design that reflects a love for the natural world. Interior plantscapes can be used to create healing, pleasant spaces. The use of plants indoors, to realize biophilia objectives and improve indoor air quality, has helped secure Innovation Credit 1.2 in LEED projects. Breathe provides a benefit to indoor air quality that no HVAC system can supply, improving interior air quality and promoting occupant wellbeing.

To learn more about Breathe, contact Team Breathe at DIRTT; Breathe@dirtt.net.

BREATHE FAQ

How does the living wall work?

Breathe™ shares the same notion of modularity as the rest of the DIRTT system. It supports living plant modules and an independent water delivery system. Unlike hydroponic living wall systems in which the roots of plants become intertwined and literally embedded in the wall's material composition, Breathe is a box-type system. Plant modules or pots are discrete, and the modules and water delivery are separate units to ensure plants can be maintained and removed individually for servicing or replacement.

The Breathe module is designed to take three sizes of plant pot – 6 x 6", 3 x 6" and 3 x 3". Larger wallscape compositions would use 6 x 6" pots. Given the wide diversity in plant habit, leaf shape and color, plant designers can create works of art with plants. Breathe gives them the latitude to compose a living wall that also changes over time. The pots integrate into the modular slat wall surface. DIRTT's intelligent 3D ICE software treats the plants as objects, which can be dropped into place for easy composition along the slat wall.



How do you water the Breathe wall?

Breathe is designed to eliminate plumbing problems and reduce complexity for occupants. For larger Breathe installations a portable irrigation system, such as a WaterBoy, is used to fill the horizontal troughs beneath the plant pots. Smaller systems can be filled with a hose attached to a tap, or with a watering can. There is only one fill point for a wall of plants, at the top. Water travels along the troughs where it is wicked up into individual plant pots by a device that promotes capillary action. Breathe effectively separates the plant pot and growing medium from the water system, thereby eliminating mess and fuss usually associated with watering plants. An overflow mechanism at the end of each trough prevents water spillage and directs the extra water to the next trough. At the bottom of the wall any remaining excess water is captured. There is no water wastage with Breathe. Fertilizer can be added to the portable irrigation unit for dispensing during watering.

Is that real dirt in the DIRT Breathe wall?

Breathe uses a professional, general purpose potting medium. No, it's not dirt! This is a soilless growth medium designed for the cultivation of horticultural plants, usually combined with a biofungicide to prevent root diseases. It is airier than dirt, does not compact and lets in more oxygen. It usually contains few nutrients; these must be regularly added with fertilizer. The medium includes some inoculates with beneficial bacteria to minimize soil-borne insects.

What kinds of plants will work with Breathe?

The type of plants used in a living wall are dependent on a number of factors: light levels, plant availability, design factors (color, height, growing habit), and the decision to select plant species for their ability to remove VOCs. DIRT does not make recommendations about suitable plant species. Designers should consult a plant library or interior landscape professional to learn more about varieties suitable for the wall. The website www.gpgb.org maintains a list of plants known to remove VOCs and other pollutants. Light is usually the most important factor governing plant choice and growth in interior environments; local or regional availability of plants is another consideration.

The standard 6 x 6" pot in Breathe is sized for a 6-inch plant. Newly planted pots will immediately look full if a 6-inch plant is used. Smaller, 3-inch pots are also available if a more complex plantscape design is desired. In the right light and with regular watering and care, plants can last at least five years before they need to be replaced.

Who plants and takes care of a Breathe wall?

Breathe is simple enough that any occupant could plant and care for a small living wall plantscape. Larger installations in commercial and institutional settings require plant professionals for care and maintenance, and to comply with credit criteria under green building rating systems. Professional plant contractors undertake weekly cleaning; prune plants; monitor nutrient levels and administer nutrients; monitor and control pests; ensure mold does not grow and spread; and replace diseased plants as necessary. They may also provide advice in the selection of plant species that are known to introduce microbes (bacteria) that break down VOCs and increase oxygen production in interior environments.

How do you purchase Breathe?

Contact your local DIRT Sales Rep or the [Breathe Team](#) to learn how to order and specify Breathe.

DIRT—'Doing It Right This Time'; refers to creating unique workspace interiors with responsive, Agile Architectural Solutions. Self-expression and dynamic sustainability combine to produce customized, productive office walls that are award winning, sustainable, long-term assets. Further improving the process, DIRT uses real-time, interactive 3D software called ICE®; a single software application for a fluid flow of information, from design and point-of-sale to the manufacturing floor, eliminating order entry errors and inter-application conflicts. ICE is completely interoperable with the industry standard AutoCAD™.

