




# F2 Facade

The **affordable** green wall

F2 Facade by  
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'symbiosis  
of  
green and  
grey



**'a green wall  
system developed  
and engineered to  
remain faithful to  
nature '**

# 1 -Design concept behind the F2 Facade ®



## The F2 Facade ® a wall system for flora and fauna

F2 Facade® is made up of concrete blocks with two vertical hollows and two openings in the front : The Green Wall Block. The vertical hollows form a tube which is packed with substrate after which vegetation can be placed in the forward facing cavities. These cavities are ideal nesting grounds for insects, animals and birds. Indents on the top of the GWB allow room for the irrigation system. The F2 Facade is built from these blocks cemented together in an overlapping manner. This method of building ensures an effective green wall with minimal plant loss at an affordable price.

Created from a vision for the conservation of flora and fauna, especially relevant in this day and age where infill and improvement are hot topics, the F2 facade offers the possibility to build densely whilst increasing vegetation in the cityscape. During development the design was approached in a holistic manner to combine multiple functional layers into one element. As such the F2 Facade is combines three functional layers:

1. Structure, the F2 facade replaces the external wall.
2. Climatological division for water, wind and rain.
3. Optimal plant growth through substrate and irrigation.

The balance between these functional layers determines the price. The f2 facade is unique in this manner and is simply incomparable to other green wall systems.

## A new era of common sense

A wall is more than the separation of the inside and outside spaces. Walls are symbolic for how humanity has conquered space from the natural flora and fauna . Traditionally walls shut flora and fauna out, with all the accompanying consequences. It's time to approach these issues from a new perspective and allow nature it's space by integrating it with economic neccities.

## Advatages of green walls :

In recent years the use of green roofs and facades has increased. Green walls have been shown to contribute positively towards a greener and more appealing living environment, importantly they last long and have low maintenance costs. Other advantages include:

- They have a cooling effect in the summer (through evaporation).
- They regulate the temprature in the winter.
- They are CO2 neutral.
- They create more space for flora and fauna.
- They reduce enviromental noise by absorbing sound.
- Vegatitive walls filter the fine dust particles from the air.

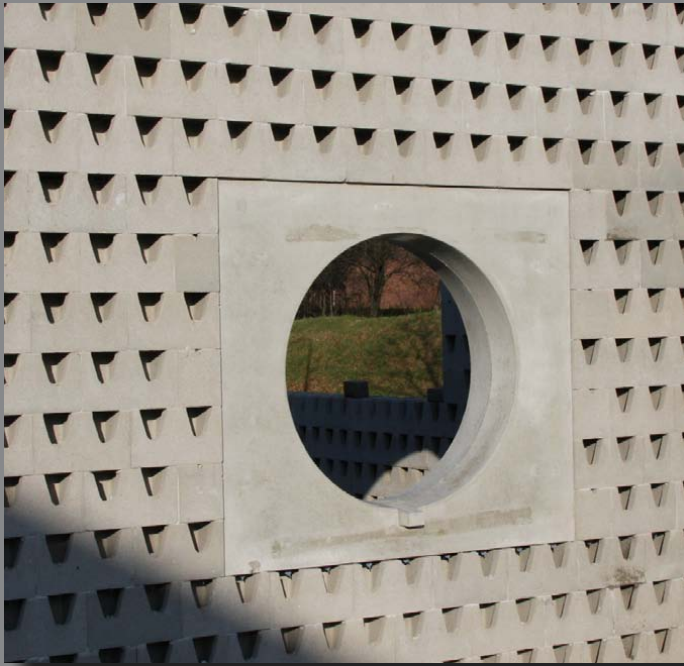
Although the advantages of green walls are roughly the same as for green roofs, two important differences exist:

1. Green walls are more visible and therefore have a higher visual impact.
2. Green walls use no floor area. In this way it is truly green that replaces grey; it adds vegetation to surfaces that would harbor none.

**'unique  
and  
affordable'**



## 2 -The constituents of the F2 Facade®



### The Green Wall Block (produced under license by BIA)

The patented Green Wall Block has an open bottom allowing roots to grow throughout the entire height of the wall. Combined with F2- Substrate this design allows the plant a natural environment and increases its life span.

### Information Green Wall Block (BIA):

#### COLORS:

Grey Article no.22061  
 Anthracite Article no.22066  
 Other colors available upon request per project



#### DIMENSIONS GWB:

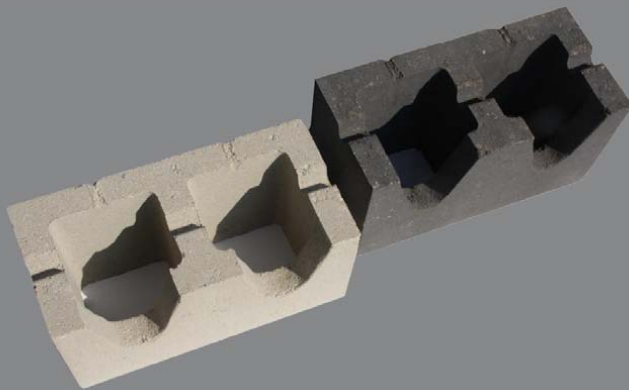
Dimensions L x B x H :

Amount per M2

347 \* 172 \* 198 mm

14,5 blocks per m2

Half blocks or blocks with other dimensions upon request or sawn on site.



#### TECHNICAL SPECS GWB:

Weight:

13,8 kg Per block

Saturated weight:

21 kg per block

301 kg/m2

1.769,16 kg/m3

Compression strength :

Min. 15 N/mm2

Thermal :

1 W/m2K

Processing :

Glue with mortar  
 BIA 947

Finishing :

top of walls covered with holonite or freestone cover plates.

Dilatations:

advice dilatations by product specialists BIA

SUBSTRATE:

Delivery weight:

F2 substrate type Heavy  
 ca.1020 kg/m3

Dry weight:

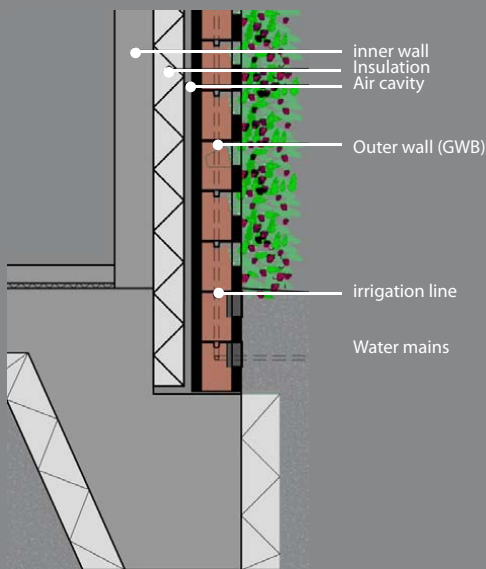
ca 1070 kg/m3

Maximal wet weight:

ca 1480 kg/m3

IRRIGATION LINES:

PE piping KIWA with T- end and transition jointing with drip nozzles



F2 Facade as an external wall

### THE F2 FACADE® CAN BE USED AS:

- an outer wall
- a garden wall
- a sound barrier

## **F2 Facade®: Delivery and placement**

All versions of the F2 Facade® can be delivered and placed by F2 Facade Ltd.

This includes the engineering of the irrigation system and lines, delivery of materials, the bonding of the Green Wall Blocks and delivery and placement of substrate with plants of choice for the desired design.

All versions are also available as a 'do it yourself kit' (DIY kit). Here we deliver all materials with irrigation system designs and provide building advice. For both the Stand Alone and Web Based versions we install, program and test the irrigation installation.

## **3 - The different (irrigation) options for the F2 Facade®**

### **F2 Facade® Basic Version**

The F2 Facade® Basic irrigation system has been specifically developed to irrigate walls with a small surface area in a simple and cost effective manner using a simple and easy to use timer device. This irrigation system uses water pressure directly from the water supply system and is therefore limited in its application. Additionally, the timers watering schedule requires manual adjustments for changes in weather and seasons.

The F2 Facade Basic system is ideally suited for garden walls and small facades.

### **F2 Facade® Stand Alone Version**

The F2 Facade® Stand Alone irrigation system lends itself to larger projects. Through the addition of a pump the water pressure can be increased making this version ideally suited for the irrigation of larger areas. The F2 Facade® Stand Alone system can in principle regulate an unlimited number of irrigation groups and can be programmed to regulate the addition of liquid fertilizer automatically into the irrigation system. The system can be set manually through the timer and preprogrammed with seasonal settings.

The Stand Alone system offers a good balance between functionality and price. This system allows all irrigation groups to be controlled through a single timer with a single location. Additionally, one can opt to install a grey water circuit which allows for the recycling of rainwater for irrigation.

Although the system allows for switching between stored irrigation programs these need to be selected manually.

### **F2 Facade® Web based Version**

The F2 Facade® Web Based irrigation system is the most extensive version we offer. This version has all the qualities of the F2 Facade® Stand Alone version however uses temperature and moisture sensors and is connected to the internet. the sensors allow the system to monitor moisture and temperature levels within the wall allowing the system to be self regulated in a demand driven manner. The internet connectivity allows for remote monitoring of the facade through a GUI where the irrigation and fertilization can be adjusted directly or by F2 Facade Ltd.

A high level of automatization is achieved with this version and is the optimal irrigation system for bigger facades and walls. The system requires little to no maintenance and can be run completely automatically. With this version of the F2 Facade® we provide a green guarantee and offer a maintenance contract for the irrigation control system and vegetation.

# 4 - Plant options for the F2 Facade®

At least 35 plant varieties have been tested within the F2 Facade®. Some plants lose their foliage in autumn revealing the block motif whilst other plants remain evergreen. Vegetation which flowers can also be incorporated. We keep these factors in mind when designing the wall. As such plants can be customized to allow for different effects, for example walls that change with the seasons' colors or that remain green all year round. The wall can even be used to grow vegetables, fruit and herbs .

**'now that's a fruitful wall!'**



F2 Facade® as an external wall at the care center 't Brook in Voerendaal



**'as an external wall'**

**'weeds, a thing of the past!'**



*'the wilderness'*

Two F2 Facades® have been placed as outer walls for courtyards at the care center 't Brook in Voerendaal. After 2 months the plants were in full bloom and providing wall cover. The DIY kit of the Basic Version was used.



*'horizontal motif'*



**The F2 Facade® along with green roofs in a luxury apartment complex on Mont St Martin in Liège**



*'the planter'*

In the center of many cities vegetation has been repressed in favour of concrete. Through the reintegration of plants and greenery within the inner city, city living becomes more attractive.

The affordable green wall



**F2 Facade**

The F2 Facade® planned as a greenhouse within a school in Moscow



A herb wall outside the kitchen for a school in Gorinchem

The greenhouse is positioned to connect two parts of the school together. Air flow passes through the greenhouse to the classrooms. In this way, the outside air is warmed whilst at the same time the warmed air is humidified by the vegetation.

**'a naturally regulated building?'**



F2 Facade Ltd. is the company responsible for the development of the F2 Facade®. Our company is specialized in giving advice about, delivering materials for and the placement of the F2 Facade®, the affordable green wall.

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