



# new elevator

the evolution of crawl space



- LOGISTICAL ADVANTAGES
- THE LIGHTEST FILLING SOLUTION
- HIGH LOAD-BEARING CAPACITY





## NEW ELEVATOR VISION

*Gas Radon does not make distinctions between private and working life: it threatens us even while we are working. Therefore, we extended our interventions to industrial and commercial buildings.*

*To work in safe and comfortable, human-sized environments is everyone's dream. We are working to make it real.*

## RECYCLING, OUR CHOICE

Not only we turn our ideas into innovative and successful products but we also commit into the study and selection of more suitable materials to guarantee both high quality and the respect of the environment.

Polypropylene (PP) is a recyclable material that can be obtained from the regeneration of plastic waste.

It is solid and strong, with high load-bearing capacity and resistant to abrasion. Regenerated polypropylene is a chemically inert material, which does not suffer from natural weathering and does not pollute the environment when in contact with the ground or with water.

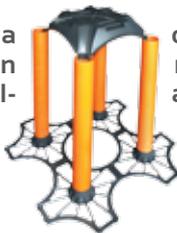
Geoplast S.p.A. in Green Building Council Italia,  
The Network of Green Building.





# NEW ELEVATOR IS SUITABLE FOR:

the construction of a ventilated crawl space with a significant reduction of the concrete consumption and installation time; moreover, it allows the installation of plumbing or electric wires. The system versatility allows the building of foundation slabs



of different depths depending on the design requirements. Furthermore, the innovative base **GRID** guarantees a simple and fast installation of the PVC tubes which sustain the entire system, while maintaining them perfectly vertical during the pour.

## BUILDING TYPES

- COMMERCIAL BUILDINGS
- INDUSTRIAL BUILDINGS
- RESIDENTIAL BUILDINGS
- LARGE SCALE STRUCTURES

## APPLICATIONS

- FOUNDATIONS
- ALL SORTS OF FILLING APPLICATIONS
- CONCRETE RAISED FLOORS
- STEPPED SURFACES
- SLOPING RAMPS
- ROOT APPLICATION  
**NEW ELEVATOR ROOTS**
- STORAGE TANKS  
**NEW ELEVATOR TANK**

# NEW ELEVATOR ADVANTAGES



Modular and single-use formwork system for crawl spaces up to 300 cm for the creation of a physical barrier between the ground and the building



## stackable

Unmatched logistical advantages when transporting and storing. At a height of 50 cm, conventional filling requires 50 trucks of filling in comparison to only 1 truck of

**NEW ELEVATOR**



## light

By far it is the lightest filling solution; the total weight of the cross section is approximately equal to the thickness of the upper slab



## high load bearing

Countless pillars, arches and domes create the highest load bearing structure

## void space



The void space created under **NEW ELEVATOR** allows an easy installation of electrical as well as mechanical systems. The void space is also perfect for ventilating damp and **RADON GAS** away from the building



## fast

When compared with traditional systems, it guarantees a faster installation up to the 80% (in respect to the use of the traditional inert materials)

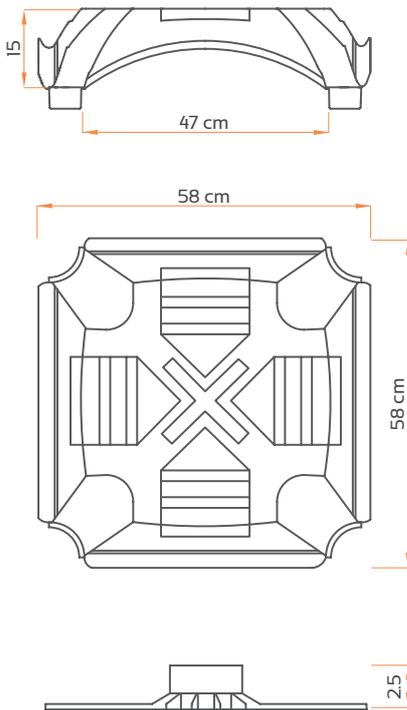


## savings

**NEW ELEVATOR** system allows savings compared to the use of traditional inert materials, especially in terms of transport and installation

# TECHNICAL CHART

# NEW ELEVETOR



Actual size (cm)  
Material  
Weight (kg)  
Package size (cm)  
No. pieces per pallet

## FORMWORK

58 x 58 x 15  
Polypropylene  
1.50  
120 x 120 x 265  
225

## GRID

58 x 58 x 2.5  
Polypropylene  
0.70  
110 x 110 x 240  
310

Actual size (cm)  
Material

## TUBE

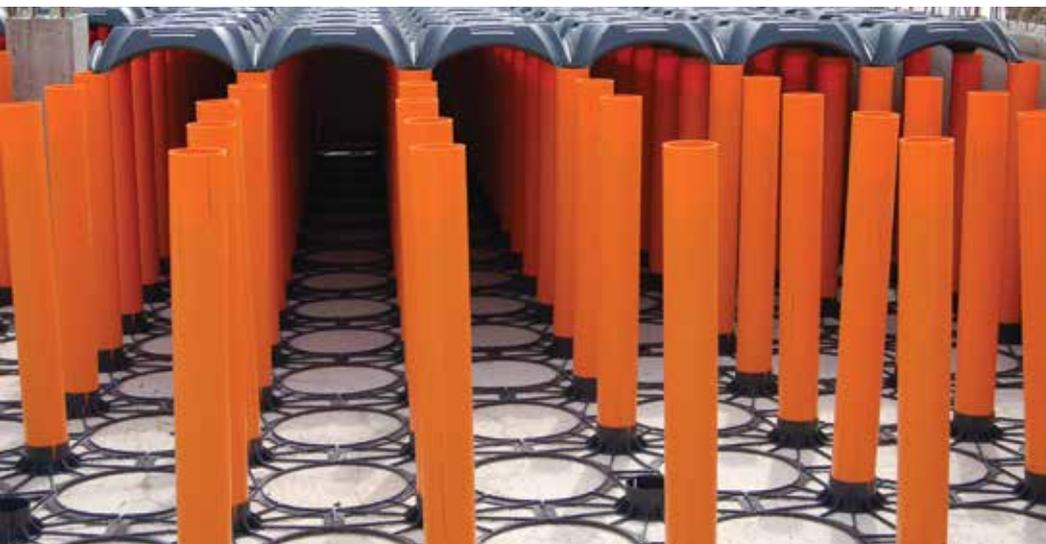
75 > 200 x ø12.5  
PVC

## LINTEL

8 x 10 x 100  
Polystyrene

### CONCRETE CONSUMPTION UP TO THE TOP (m<sup>3</sup>/m<sup>2</sup>)

$$\left[ 0,037 \times (\text{height New Elevetor in m} - 0,15) \right] + 0,030 \text{ m}^3/\text{m}^2$$



## The tube

The supporting structure consists in a classical construction tube of PVC with an external diameter of 125 mm and a thickness of 1.8 mm. When the tubes are inserted into the patented base grid and filled with concrete, they support structurally the upper formwork.

# THE SYSTEM NEW ELEVETOR

## The concept

This system is ideal for the ventilation of reinforced concrete foundation slabs for residential, industrial and commercial buildings. The product consists of a formwork, PVC tubes and a patented grid that guarantees the system perfect verticality in order to ensure great load-bearing capacity. The system is modular

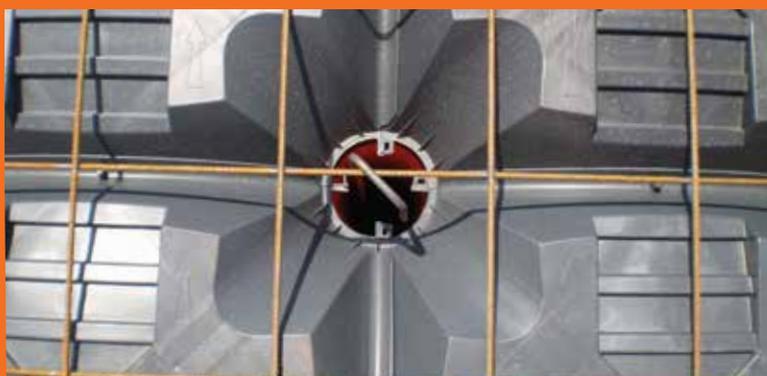
and the formwork can be installed on-site in order to build a walkable and self-supporting system which is ready for the concrete pour. When the concrete solidifies, it takes the form of **NEW ELEVETOR**, thus creating a supporting and completely ventilated crawl space.



## The formwork

The formwork is a dome made of regenerated PP (polypropylene) with plan size of 58X58 and an height of 15cm, with a bottom click rail to hook it perfectly to the tubes. The dome geometry allows a uniform load-bearing capacity over the four pillars. Moreover, it permits the reduction of the upper slab thickness.

## Reinforcement option



To deal with difficult construction sites where the combination between loads and heights is particularly complex, it is recommended to insert iron elements (such as steel bars or forks) in the tubes in order to guarantee the stability of the concrete pillars even when exposed to dynamic loads.

# DETAILS AND ADVANTAGES OF THE GRID

The base grid, essential for NEW ELEVATOR system, is made of re-generated PP and allows the perfect verticality of the tubes of PVC. The single grids are locked with one another creating a solid base grid that guarantees the stability and the walkability of the final structure.

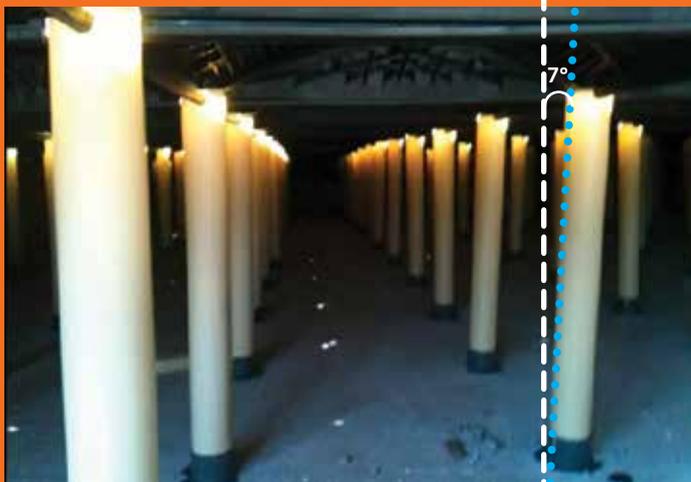


## VERTICAL TUBES

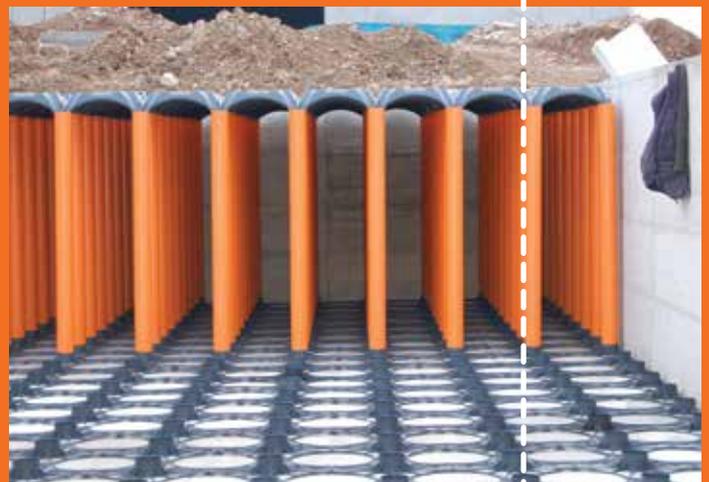
The verticality of the pillars is guaranteed by the base grip serving two main purposes:

**SAFETY:** the perfectly aligned system guarantees a safe walkability after installation

**LOAD-BEARING CAPACITY:** The verticality of the pillars guarantees the reinforced-concrete structure's reliability



classic system without grid



NEW ELEVATOR system with grid

## PRECISION

The locking system of the base grids allows the maintenance of the vertical alignment of the system (PVC tubes + formwork) and it also guarantees the extreme precision during installation. The grid is very lightweight and easy to cut: thus it can be placed even in correspondence of walls.



## QUICK INSTALLATION

The use of the base grid is a major advantage for NEW ELEVATOR system. It is an extremely lightweight and space-saving element that can be installed quickly thanks to the male/female locking system.

# ON-SITE POSITIONING

The correct installation of New Elevator system



## ① GRID

Installation of the base grid, essential for the tubes verticality and the structural resistance.



## ② TUBES

Place the tubes of PVC in the base grids.



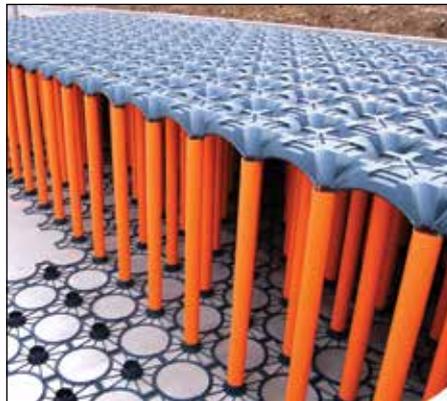
## ③ FORMWORK

Place **NEW ELEVATOR** from right to left and interlock in the tubes to guarantee safe walkability.



## ④ COMPENSATION

In the starting sides, where the formwork leans against the wall, the lists of polystyrene avoid the concrete dispersion.



## ⑤ UPPER MESH

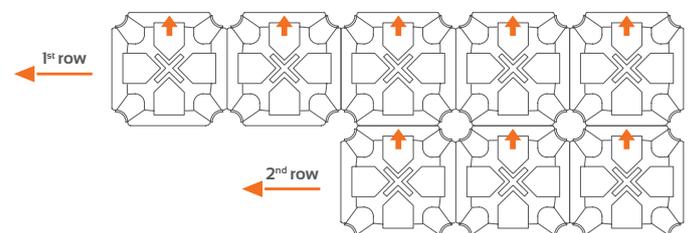
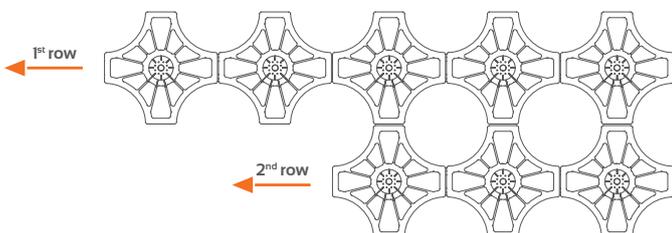
The upper mesh has to be placed right over the formwork or when required by the project over the spacers with an appropriate overlapping.



## ⑥ CONCRETE POUR

The pour comes after the end of the mesh installation. Pour concrete gradually from a side to the other and vibrate it properly.

## LAYING SEQUENCE

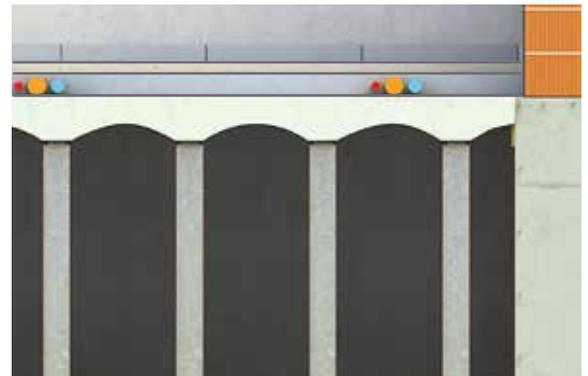


# NEW ELEVETOR THE FINISHED SYSTEM

The construction of a ventilated crawl space with **NEW ELEVETOR** requires different stratigraphies depending on the final destination of the building and the working loads. The main sections of a finished stratigraphy with **NEW ELEVETOR** system are depicted in the following picture:



- |                            |                   |
|----------------------------|-------------------|
| 1 Lean concrete            | 5 Listel          |
| 2 Grid<br>New Elevetor     | 6 Wire mesh       |
| 3 Tube<br>New Elevetor     | 7 Foundation slab |
| 4 Formwork<br>New Elevetor | 8 Pavement        |



Detail of the stratigraphy

## LOAD TABLE

Load increments perm.+acc. (kg/m <sup>2</sup> )	Minimum slab thickness (cm)	Minimum wire mesh	Concrete thickness (cm)	Gravel thickness (cm)	Pressure on the soil (kg/cm <sup>2</sup> )
up to 500	4	Ø5/25x25	5	0	0.593
up to 1,000	5	Ø6/20x20	8	0	0.633
up to 2,500	6	Ø8/20x20	10	0	1.095
up to 5,000	8	Ø8/20x20	5	12	1.031
up to 10,000	10	Ø8/20x20	5	20	1.119
over 10,000	(For further information please contact Geoplast Technical Department (ufficiotecnico@geoplast.it))				

# LARGE SCALE STRUCTURES

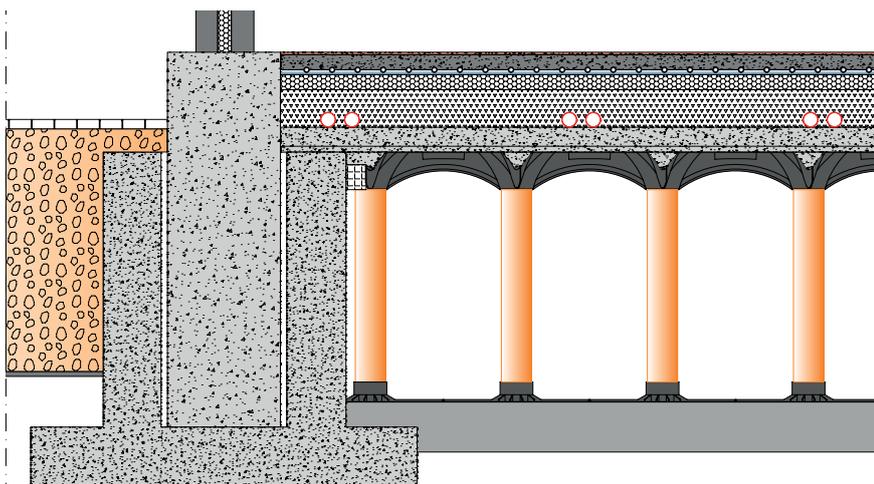


## Easy creation of crawl spaces

Thanks to its easy installation, with **NEW ELEVATOR** system it is possible to fill excavations and overcome gaps quickly even in the case of large foundations. With low concrete consumption it creates a slab over pillars that guarantees very high load-bearing capacity

and permits the transit of vehicles. Compared to a traditional filling with inert material, it simplifies the logistics and installation. Moreover, the so-created void space can be used for the installation of conduit or the creation of water storage tanks.

Easy execution  
Simplified logistics  
Material savings



Material storage in the construction site

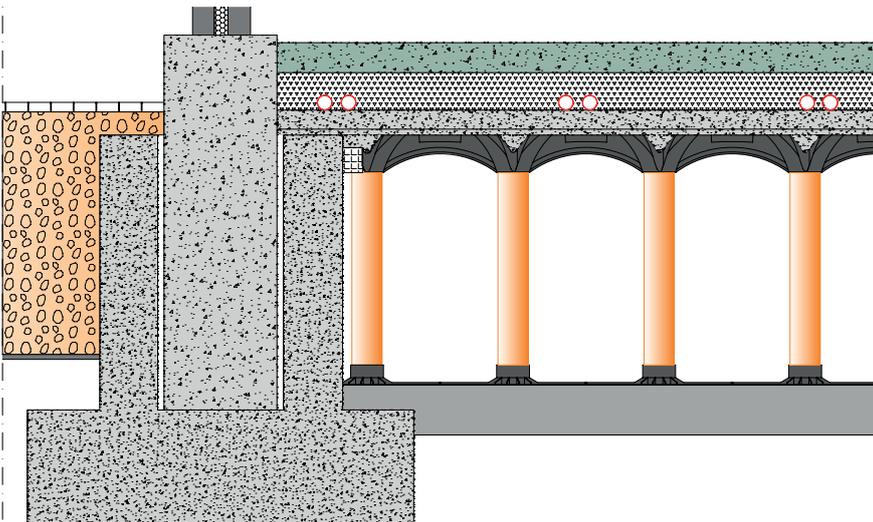


## Systems with high load-bearing capacity

The system allows the construction on-site of high crawl spaces, avoiding having to fill them with inert material and making it possible to use the so-created space for the installation of wires or pipes. The structure of reinforced

concrete that can be built with **NEW ELEVETOR** is comparable to a floor slab supported by pillars. This guarantees high load-bearing capacity against both permanent and accidental loads, which are typical of industrial environments.

High crawl space  
Suitable for heavy loads  
Technical compartment



Reinforcement of the pillar with steel forks

# RESIDENTIAL BUILDINGS

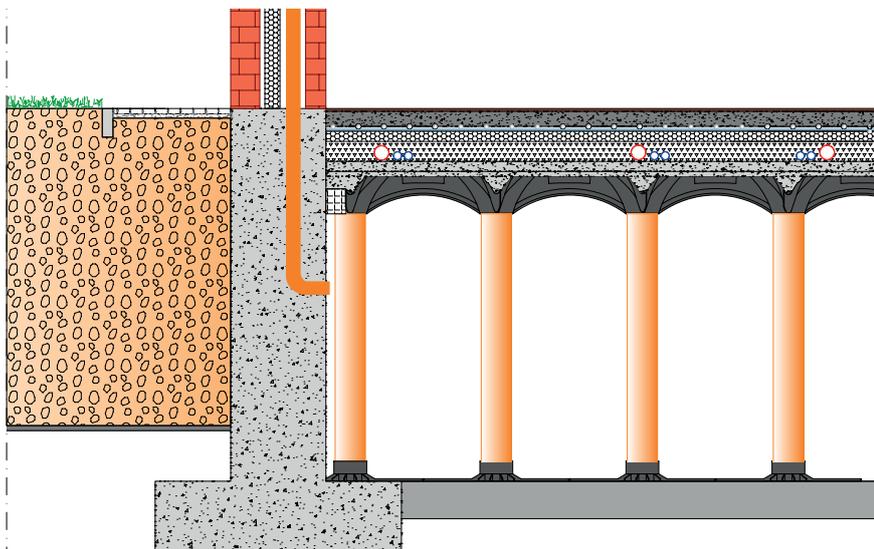


## Gas Radon: protect your house!

**NEW ELEVETOR** creates a gap of variable height in order to protect the residential buildings from the rising damp and **RADON**, a radioactive gas from the subsoil which is harmful to human health. In the case of a low

load-bearing capacity ground it is necessary to build deeper foundations. **NEW ELEVETOR** system allows to avoid the filling with inert material creating a large crawl space that can be used for various purposes.

Natural ventilation  
Gas Radon dispersion  
Moisture elimination





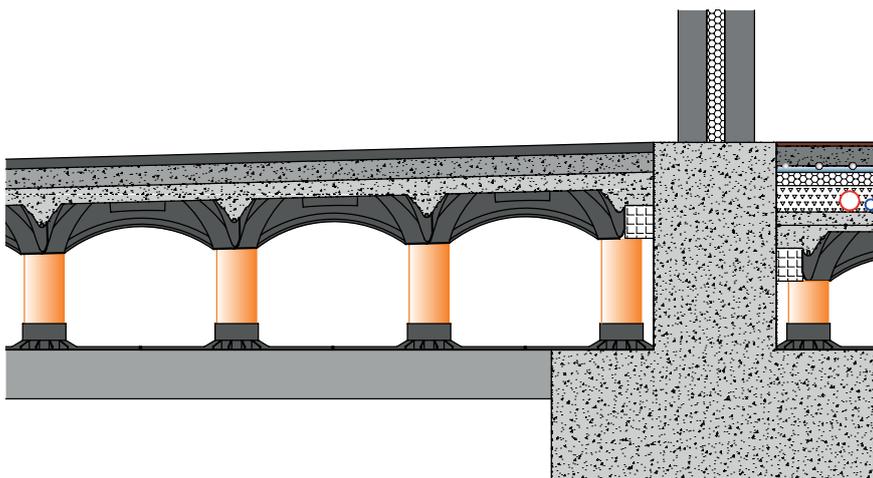
## The system for sloping surfaces

Thanks to its modularity, **NEW ELEVATOR** system allows the overcoming of the level differences, even for the transit of heavy vehicles or trucks. The ramp can be built in two ways:

- Inserting the inclined domes in the tube (inclination up to 5%);

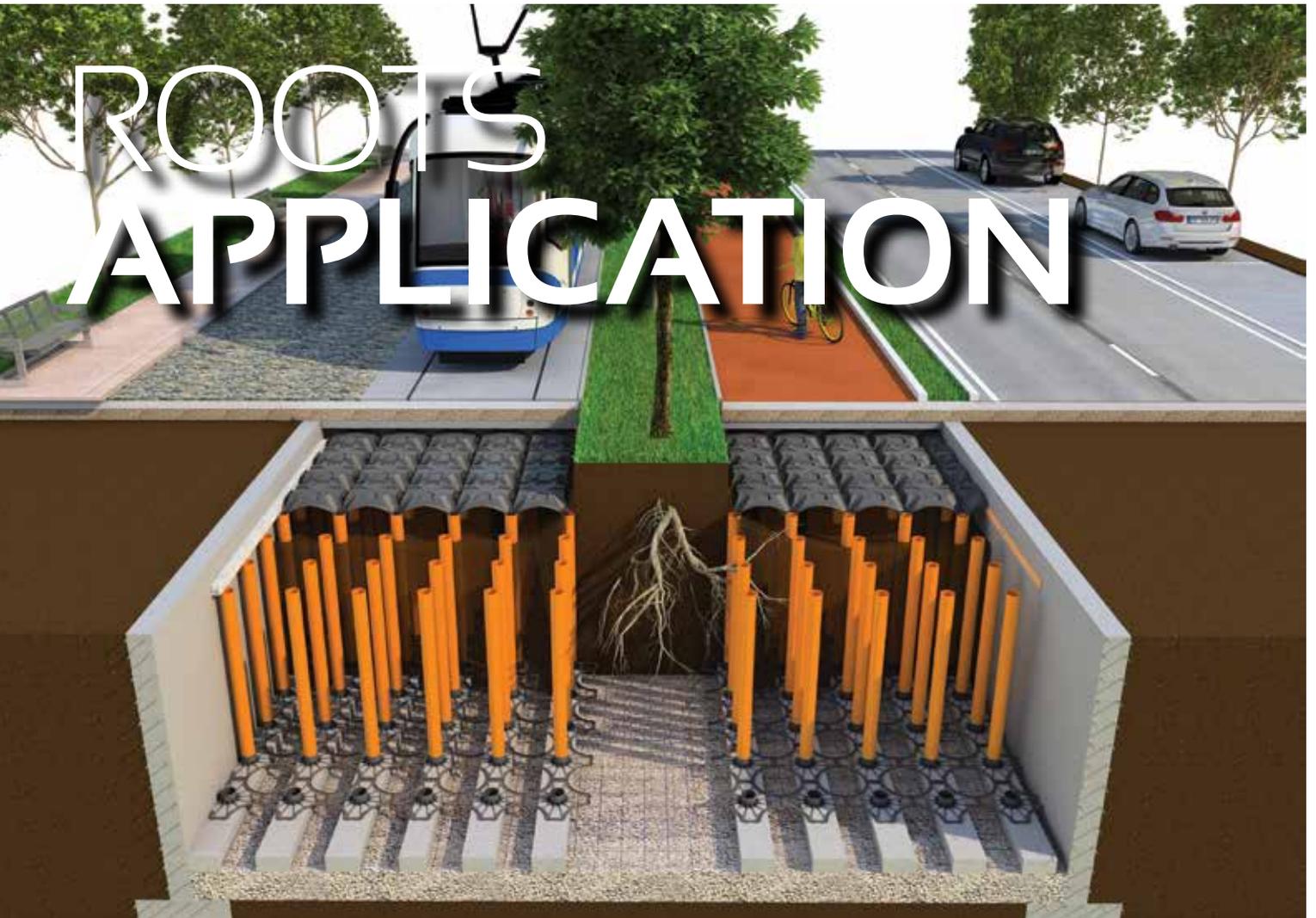
- Shaping the tubes in order to create a step and placing the domes horizontally (step's maximum height: 8 cm); the maximum slope and applied loads must be first arranged with **Geoplast Technical Department**.

Easy construction  
 Gradual slope  
 Material savings



Ramp with finished slope

# ROOTS APPLICATION

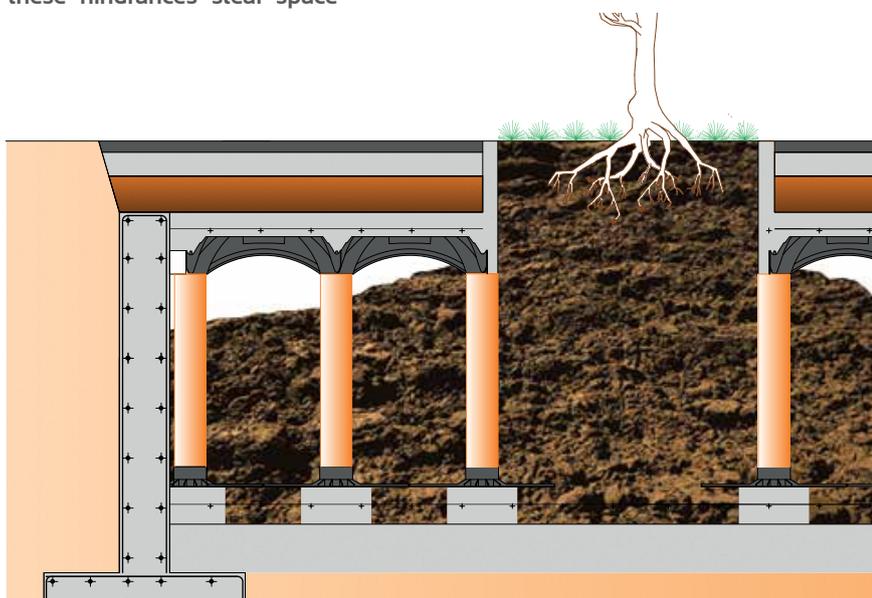


## Protecting the growth of green in our cities

**NEW ELEVATOR ROOTS** is used to preserve the growth of tree roots along the roadway. Usually, the rooting space is hindered by cables, sewages or road underground layers. All these hindrances steal space

to the roots which cause the typical upheaval of the road surface. Our solution considers the use of a slab placed at the top of a column grid in order to let the roots grow between the tubes.

**Roots protection**  
**Avoids roads upheaval**  
**Greening of traffic areas**



Section of New Elevator Root system

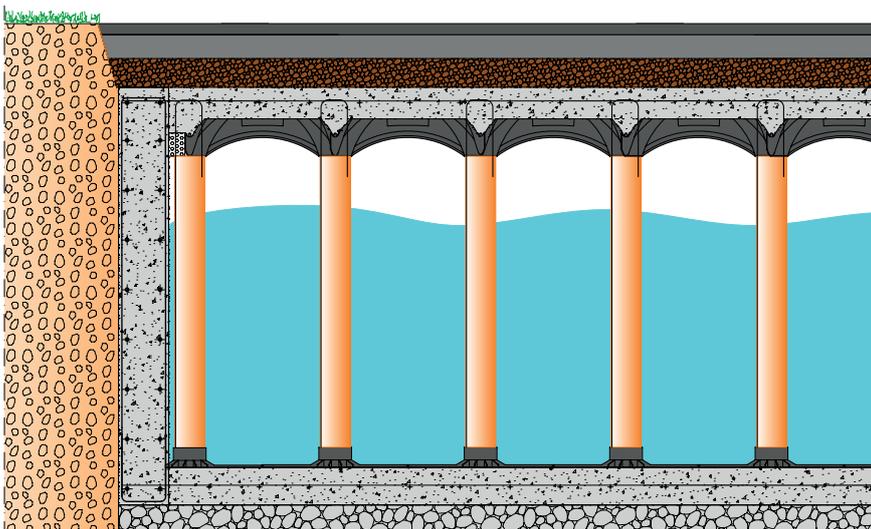


## Rainwater storage tanks

**NEW ELEVATOR TANK** is the ideal solution for the fast construction of storage concrete tanks of variable height which can be used for the storage of high quantities of rainwater in

a small space. The tank can be inspected through a pit that allows cleaning, checking the water level, the systems' functionality and the microbiological status of the water.

Customizable  
size and shape  
Inspectionable  
No lifting devices  
required



Rainwater storage tanks up to 300 cm

# STEPPED SURFACES

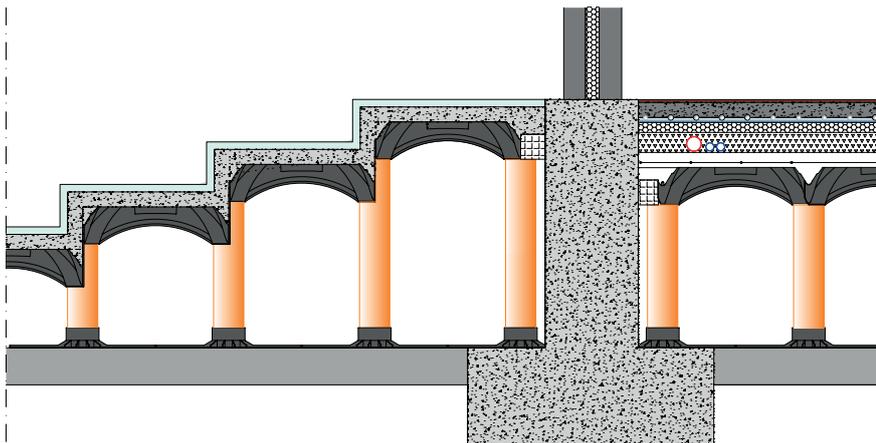


## The system for stepped surfaces

**NEW ELEVATOR** allows the construction of structures with various levels such as staircases or stepped extensions. The simple and fast installation of the system avoids the fill-

ing with inert material whom would be very complicated to deal with, especially in the contact points between areas placed at different heights.

**Variable height**  
**High stability during pour**  
**Fast installation**



Detail of the formwork installation



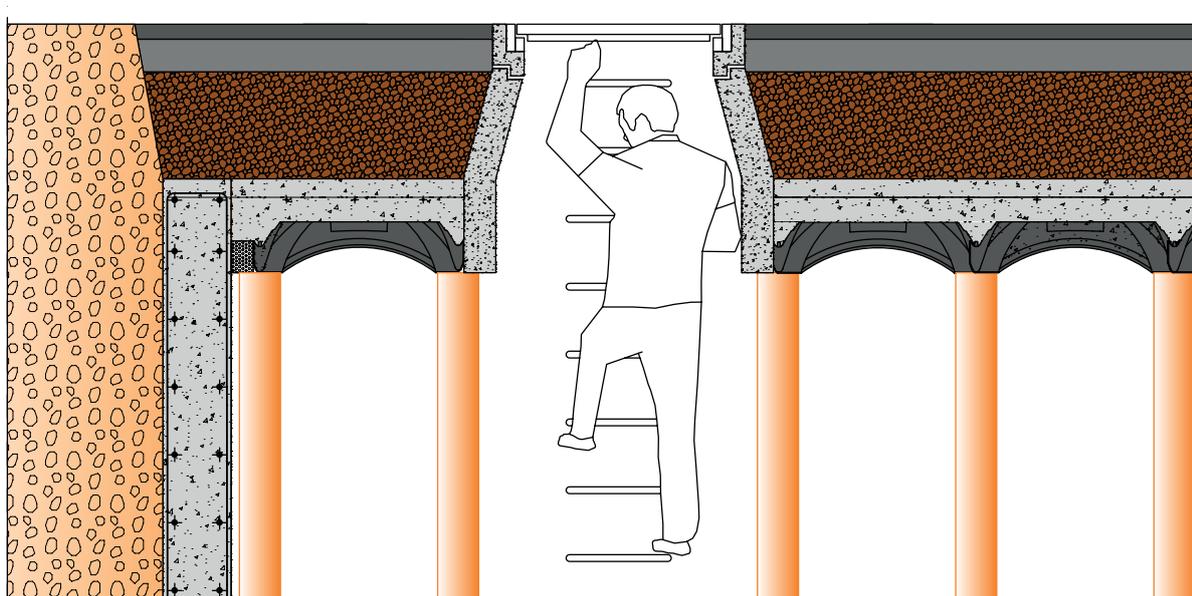
# INSPECTION MAN-HOLES

## Safety and inspectionability

The inspection man-holes facilitate to check and maintain the storage tanks. The gap between the pillars make it easy to move

within the structure, thus giving the possibility to inspect the tank even afterwards.

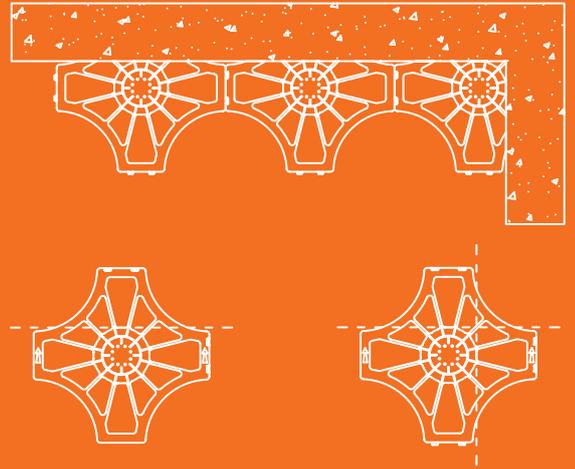
Customizable size and shape  
Easy inspection  
Easy maintenance



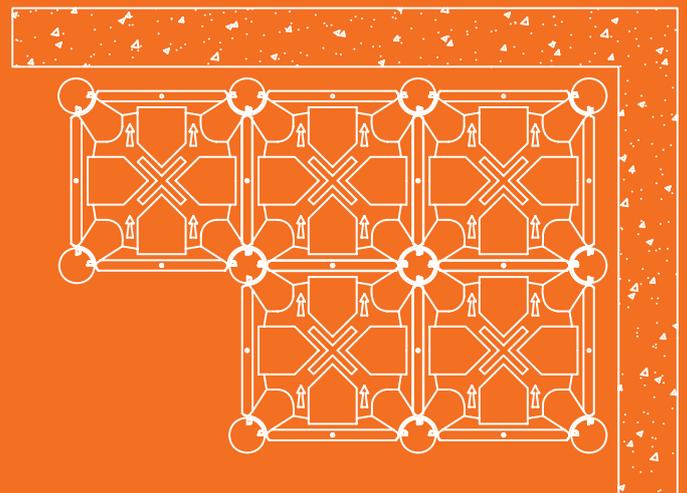
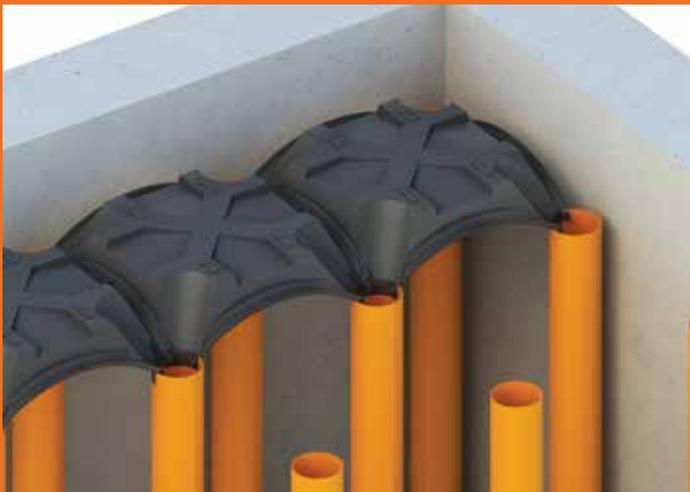
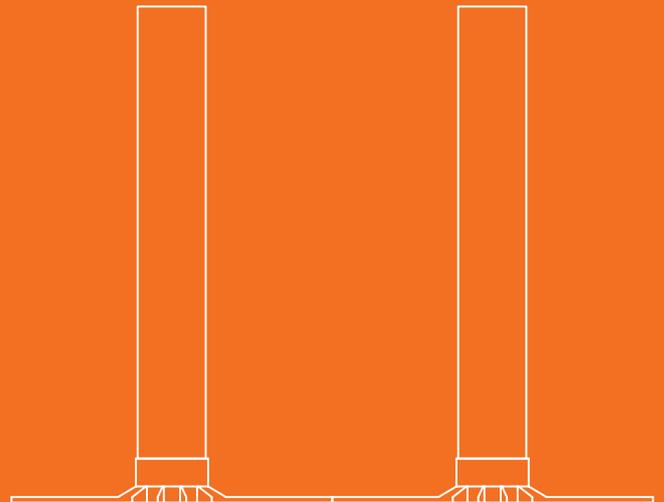
# INSTALLATION INSTRUCTIONS



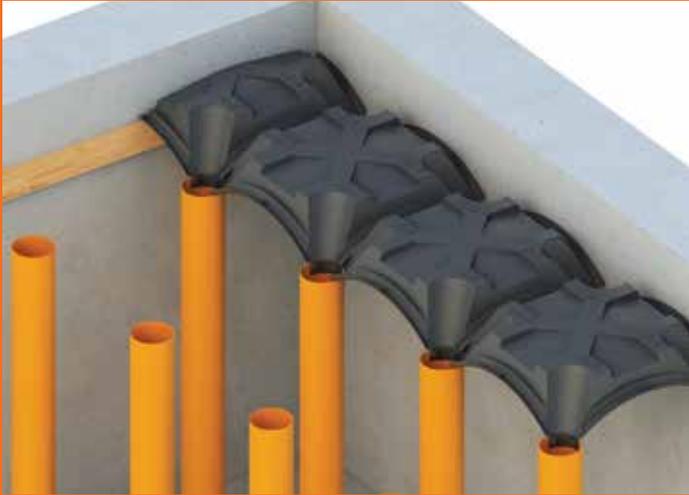
Cut the base as in the picture and place the first row against the wall, starting from the right.



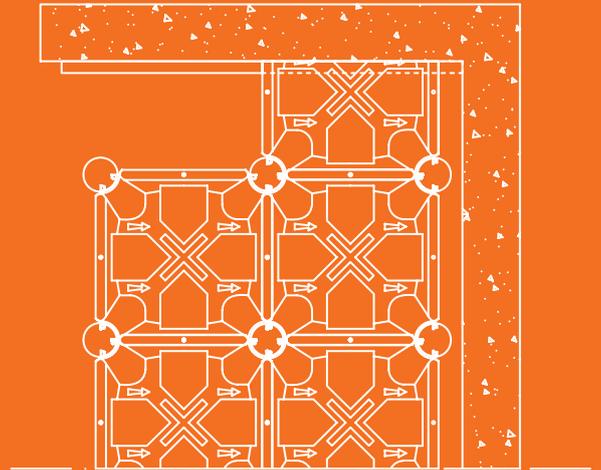
Place the tubes in PVC in the base grids and lock them pushing at the top of the tubes.



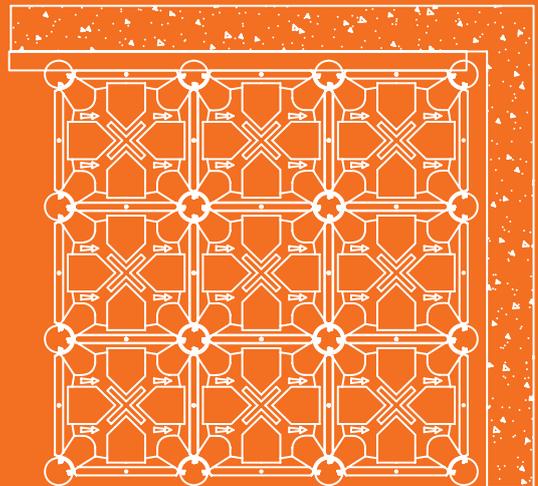
Install NEW ELEVATOR paying attention in order to wedge it perfectly.  
[www.geoplast.it](http://www.geoplast.it)



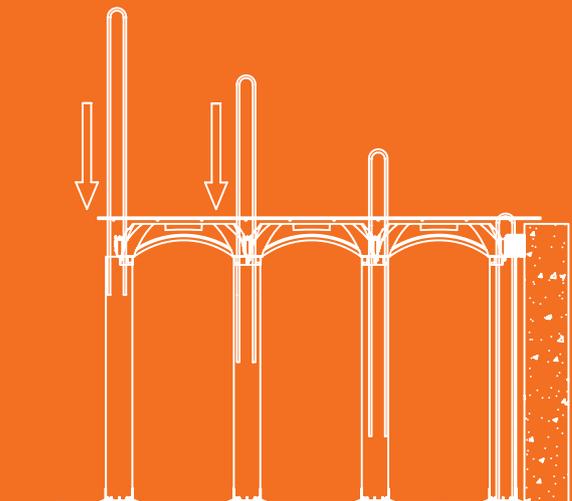
Place the last row of NEW ELEVETOR with the cut dome against the curb.



Place the lintels against the curb.



Place the wire mesh and the steel reinforcement in the pillars.





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