

How to build Redi-Rock retaining walls

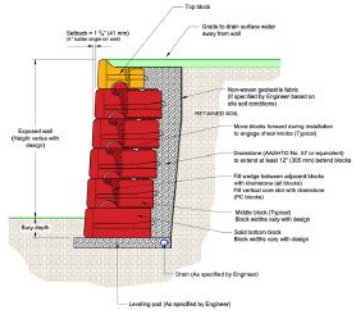
An introduction to the main features of Redi-Rock retaining wall design and engineering in 3 minutes



Bob Evans

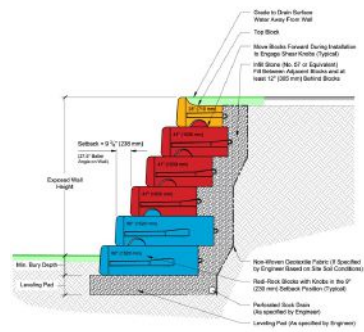
Retaining Wall Solutions

Typical Gravity Wall Section



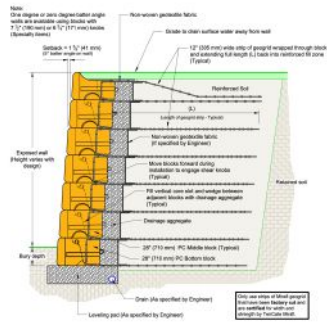
Gravity

Large Batter Wall Section

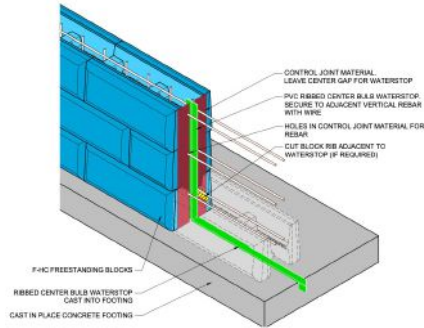


Inclined gravity

Typical Reinforced Wall Section



Earth Reinforced



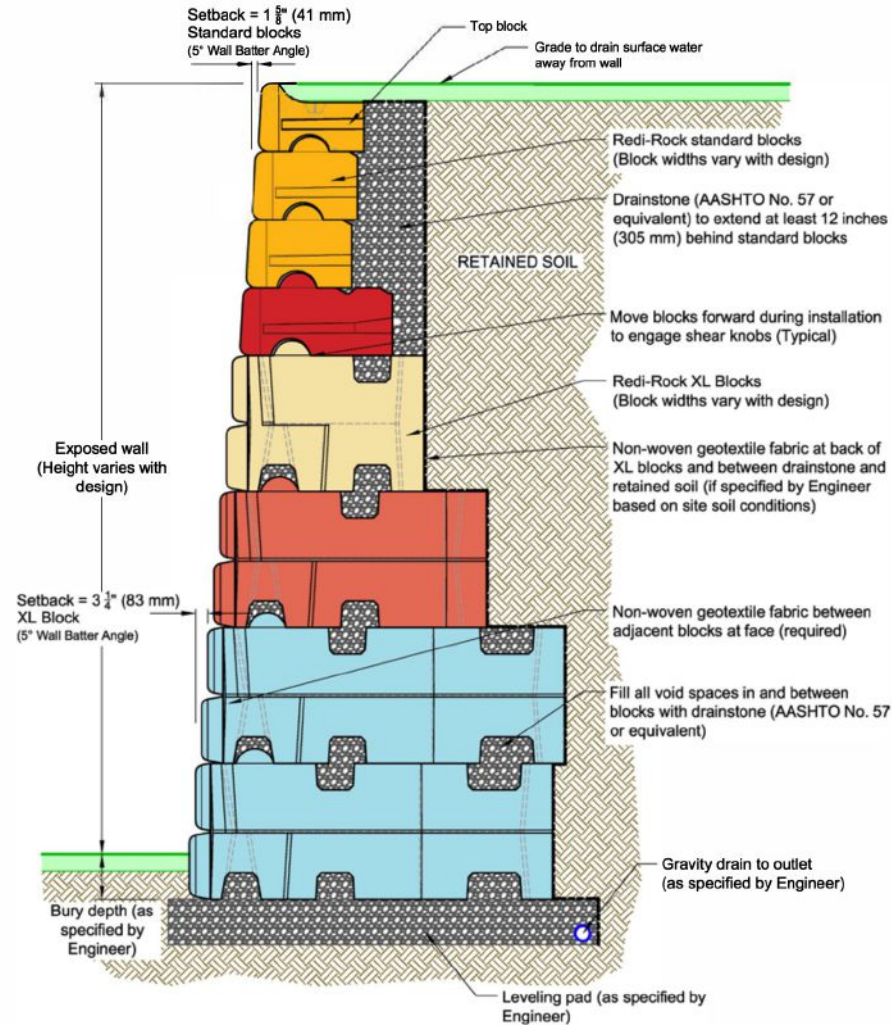
Cantilever



Introduction to Redi-Rock

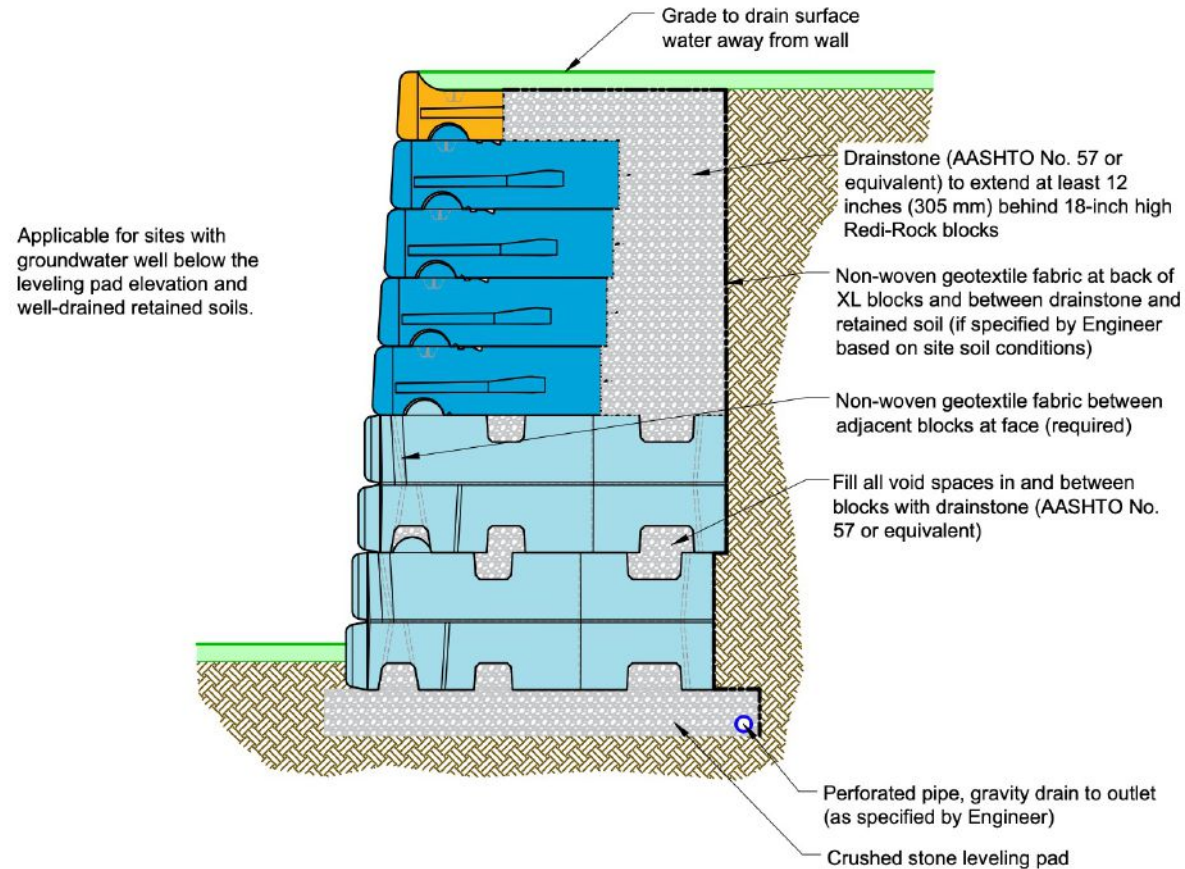
Standard gravity section

Typical XL Gravity Wall Section



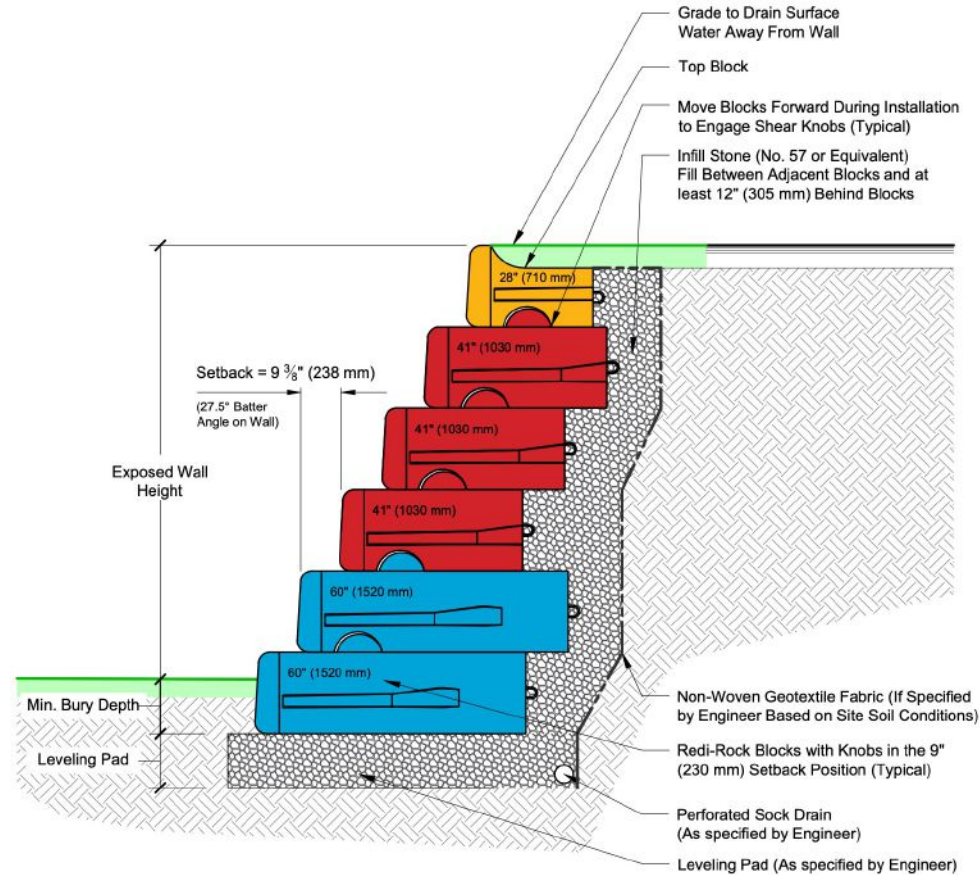
XL gravity wall design for taller walls

Typical Drainage Detail - Cross Section



Gravity wall drainage

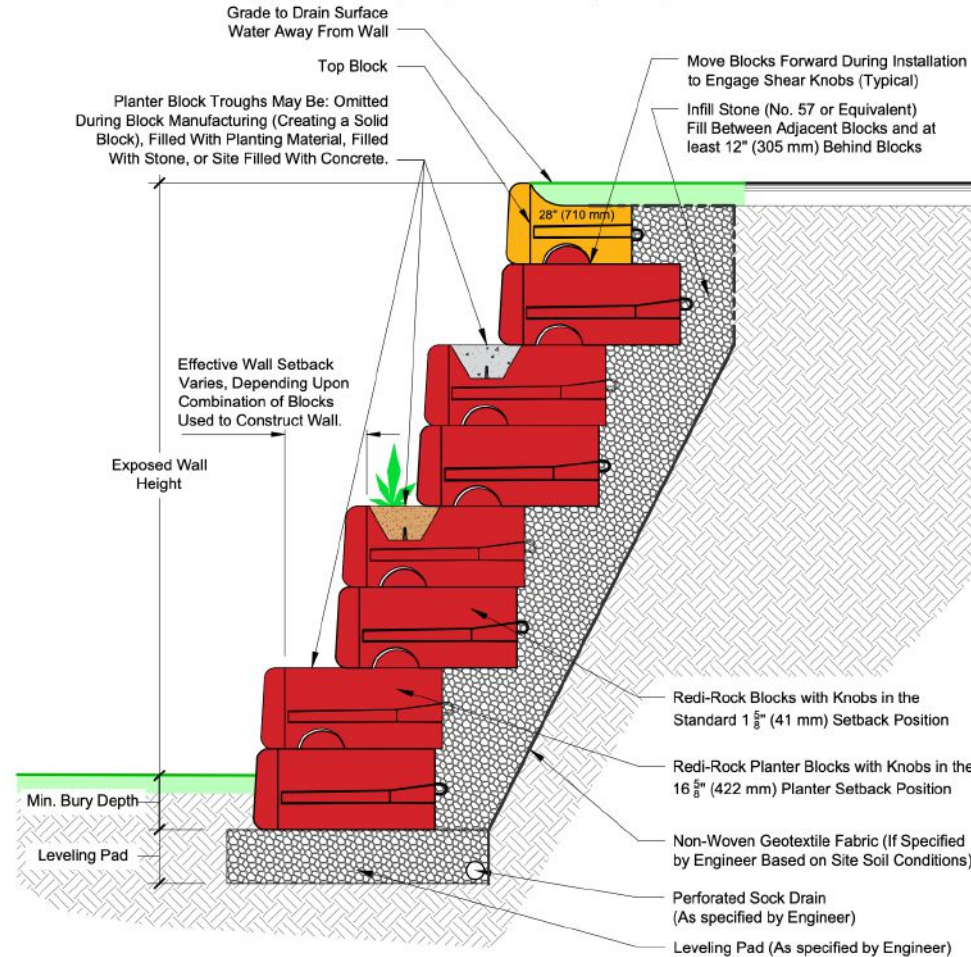
Large Batter Wall Section



Inclined gravity wall

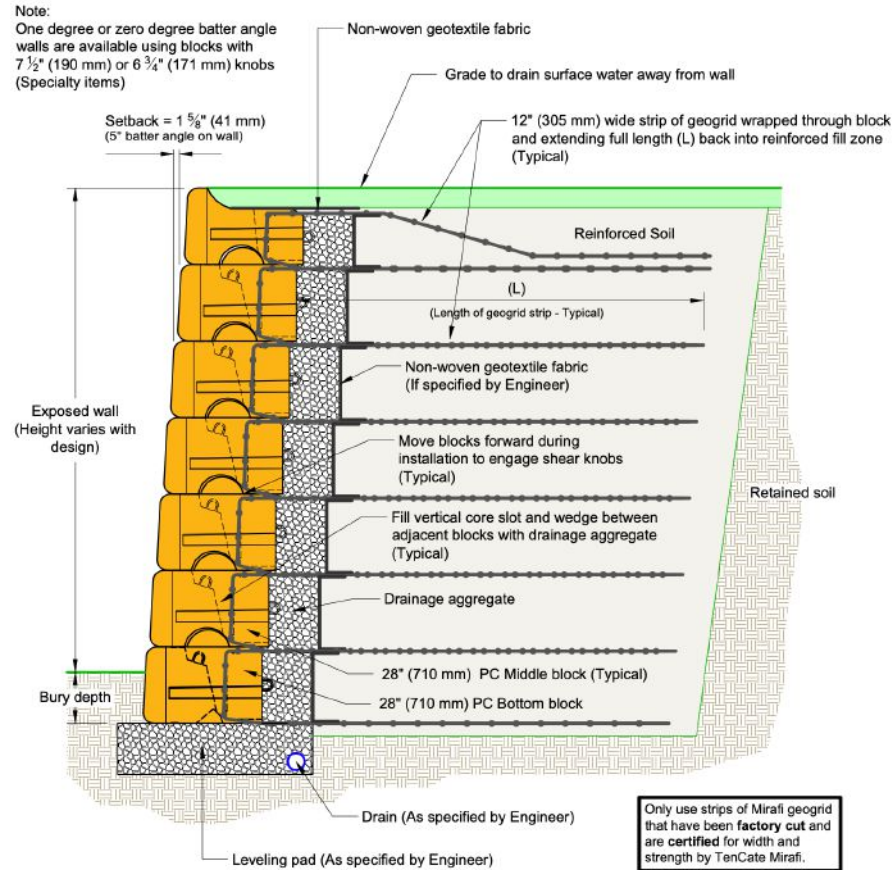
Alternating Planter & Standard Batter Wall Section

The Redi-Rock retaining blocks are available with multiple shear knob size and location options, to permit wall batter design flexibility. This detail depicts alternating 16 $\frac{5}{8}$ " (422 mm) Planter and 1 $\frac{5}{8}$ " (41 mm) Standard setback blocks, however designs are possible using more than one Standard setback block between Planter blocks. The regular repetition of combinations of different setback blocks within a wall profile can have structural and aesthetic significance. Abrupt changes in wall batter that carry over multiple blocks are not recommended.

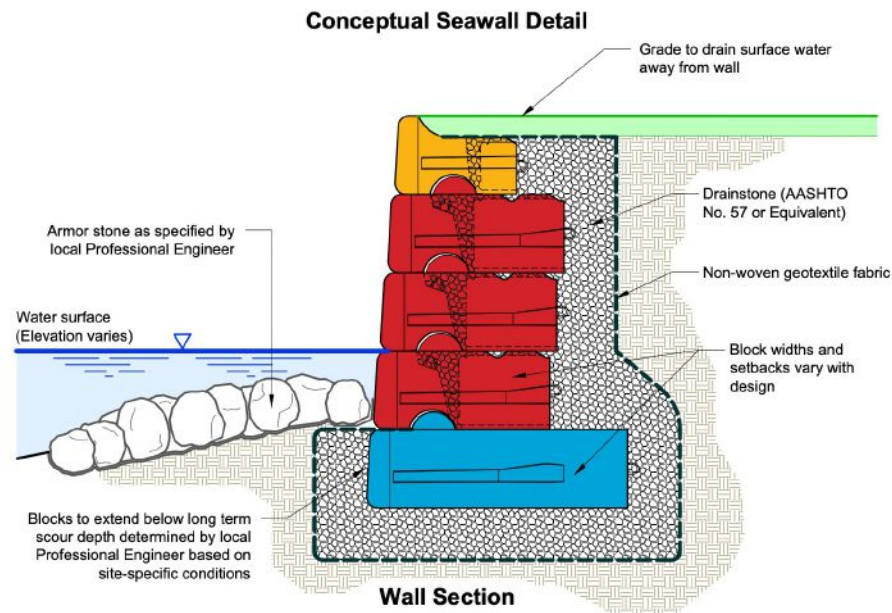


Stepped planter for housing and civil engineering projects

Typical Reinforced Wall Section

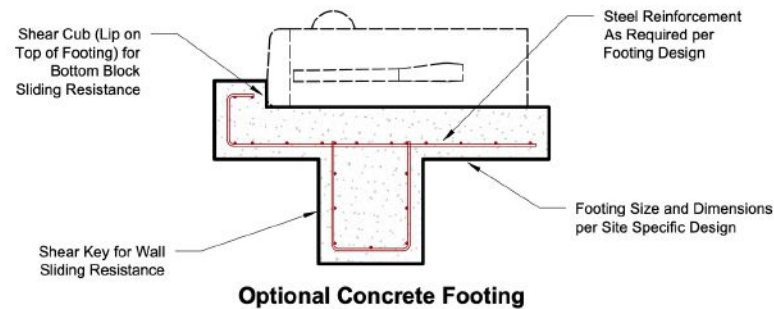


Reinforced earth wall and Redi-Rock PC System

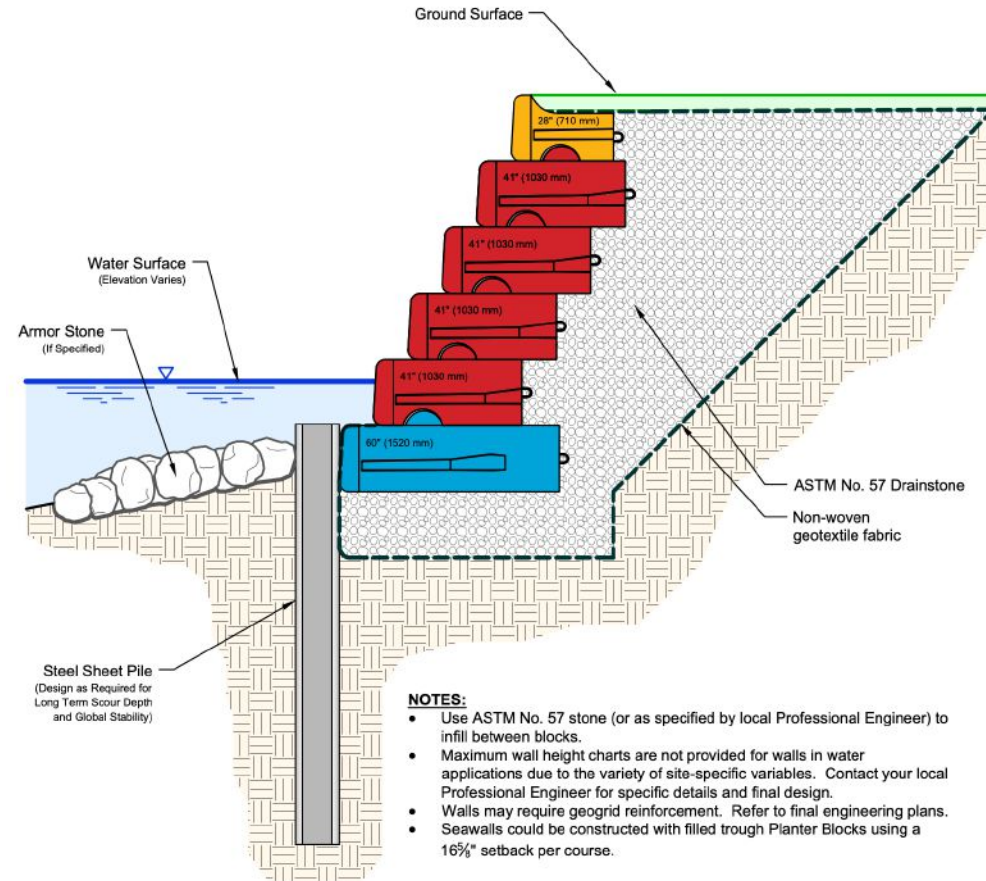


Notes:

- Use ASTM No. 57 stone (or as specified by local Professional Engineer) to infill between blocks.
- Preliminary wall height charts do not apply and should not be used for walls in water applications due to the variety of site-specific variables.
- Contact your local Professional Engineer for specific details and final design.
- Walls may require geogrid reinforcement.
- Refer to final engineering plans.



Sea wall



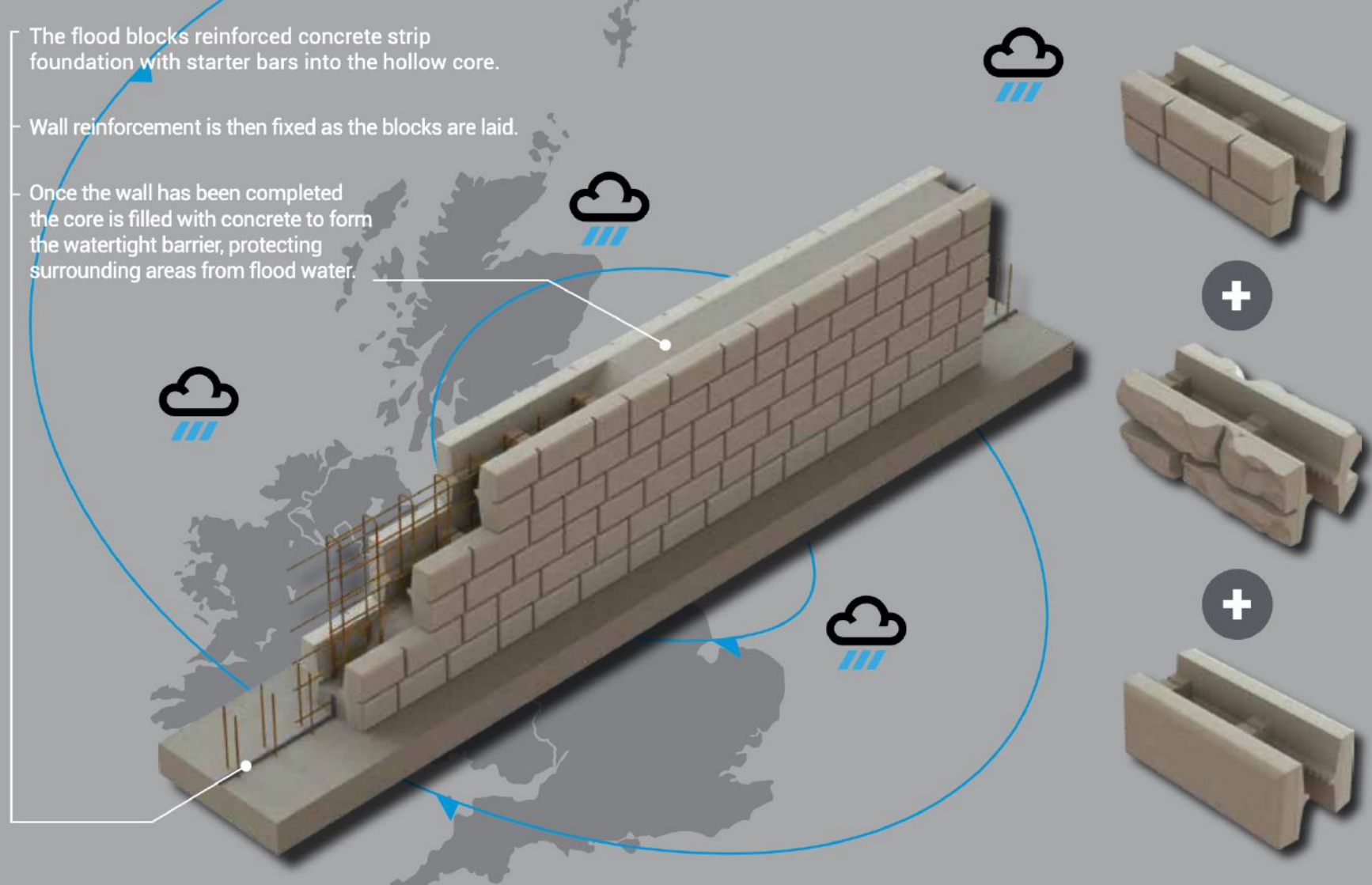
Sea wall with sheet piling and armor stone



The flood blocks reinforced concrete strip foundation with starter bars into the hollow core.

Wall reinforcement is then fixed as the blocks are laid.

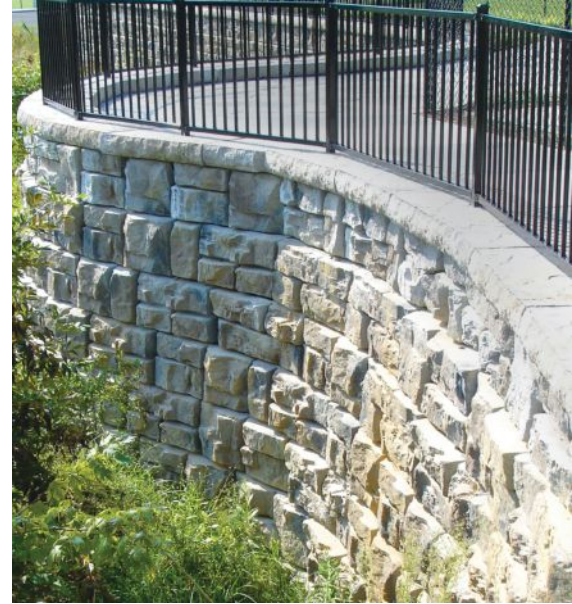
Once the wall has been completed the core is filled with concrete to form the watertight barrier, protecting surrounding areas from flood water.



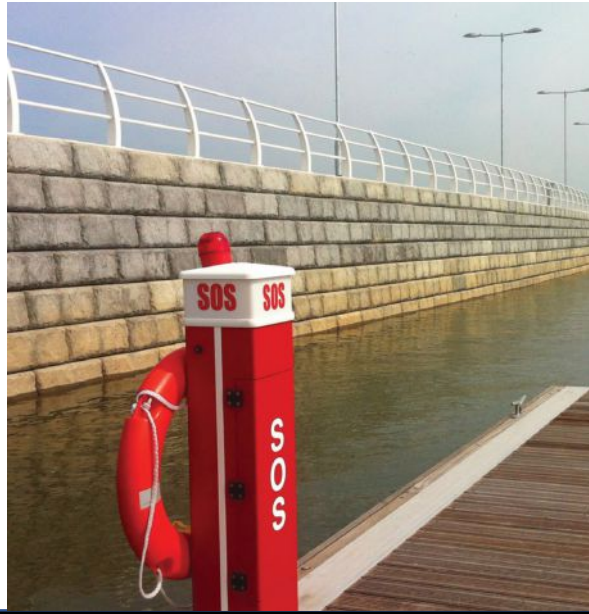
Flood defense wall system using free standing hollow core blocks



Housing



Transport



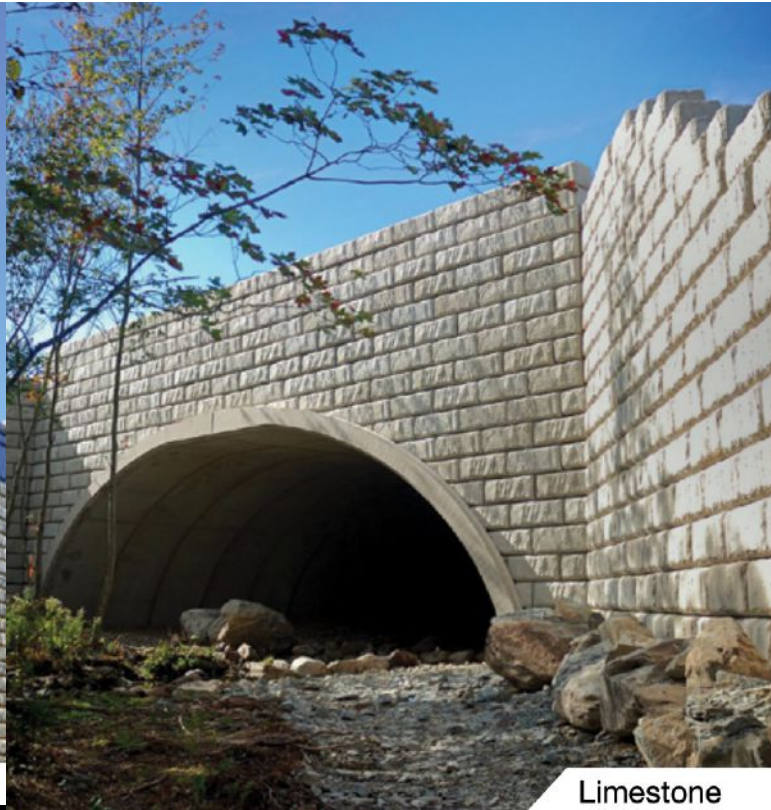
Sea defense and harbor walls

Example	Cobblestone	Limestone	Ledgestone
1. Top Block Grooved underside, dished top to accept surfacing			
2. Middle Block Grooved underside, domed top to accept next course			
3. Bottom Block Flat underside, domed top to accept next course			

Common blocks



Cobblestone



Limestone



Ledgestone

Block textures



Easy to build

Our simple 3 steps Design process

1

Step 1 - Decide on the type of retaining wall

One of the hardest things to do is to select the right retaining wall type.

Each retaining wall type has pros and cons.

Our support can help you select the right one for your requirements and budget.

2

Step 2 - Design the retaining wall

Our structural engineer is a specialist retaining wall expert. We can turn around retaining wall designs in a matter of days.

You will receive a full retaining wall report, a complete set of calculations, and a sketch showing you the design, including the material specifications.

You will also be protected by our professional indemnity insurance allowing you to sleep at night.

3

Step 3 - Use our supply chain to get the best build price

We have a comprehensive supply chain for the supply only or supply and installation of your retaining wall once it has been designed.

We can prepare material schedules and bills of quantities to give you a budget to work from.

You can save time and money trying to find suitable suppliers and contractors using our service.

How to build Redi-Rock retaining walls



Bob Evans

The Next Step

- Tell us about your project.
- Complete the form.
- We are here to support you.

Hello my name is Bob Evans and today I am going to give you a introduction to the main features of Redi-Rock retaining wall design and engineering in 3 minutes

There are four design principles for redi-rock retaining walls

- Gravity
- Inclined gravity
- Earth reinforced
- Cantilever

This is a standard gravity section for heights up to 5.5m using standard blocks and subject to the load case.

When the height increases XL blocks are used. Wall heights of up to 7.3m can be achieved subject to the load case

XL block are hollow and allow filter stone to be placed that is also used to drain water from the back of the wall. This design detail reduces the excavation profile.

The gravity inclined design reduces the number of blocks required and therefore reduces cost if a protected slope is acceptable. The inclined design also reduced excavation costs.

An inclined design allows for plants to be used, give a good detail for housing and civil engineering projects.

Reinforced earth wall or MSE (mechanically stabilised earth) use the reinforced earth as the retaining structure. The block on the face act as protection of the earth wall. The reinforcement stops the soil from shearing as well as tying the blocks to the earth wall.

Redi-Rock have designed a a Positive Connection, (PC System) meaning the connection strength is not limited to the friction between blocks, allowing the utilisation of 100% of the tensile strength of grid, which reduces the required anchor length and excavation costs. Walls up to 17m high have been achieved.

For high walls it is recommended to design more than one wall type to compare construction costs. The cost will depend on the earth works profile and soil type.

Redi-rock systems have been used successfully for sea and harbour projects. These are some typical designs.

The redi-rock free standing hollow core block is ideal for the construction of flood walls. There are a number of wall finishes that make them a popular choice for flood defence walls. The wall is slim as it connects to a foundation and deploys a cantilever design.

The key market positioning for redi-rock retaining walls are:

Housing – The block types and colours make the solution very attractive. The gravity designs reduces the excavation profile and can be built quickly reducing the build program.

Highways – Redi-rock is a substantial design and is ideally placed for highway construction.

Sea walls – Redi rock has been used in the UK for sea walls.

Redi-rock in the UK is supplied in three types:

- Cobblestone
- Limestone
- Ledgestone

You can see the top blocks, middle blocks and bottom blocks.

The blocks also come in half blocks to allow for bonding.

You can see the overall effect of each type of block type in these images.

Redi-rock walls are easy and simple to build. A gang of three men and a excavation machine can install about 40/50 m² per day.

Our process

We can support you with the correct selection of wall type and budget.

When you want to start we can then give you a full design using a structural engineer using the soil types and load case for your project. Every project is different and the design needs to be verified.

And finally we can support you with the ordering of the blocks to make sure you order the correct types for wall ends, corners and all the other details required to build your retaining wall.

The next step

Tell us about your project

Complete the form on this page and we will support you with the selection, budget, design and supply of the blocks.