

*"Calm."
"Confident."
"I slept at night."*

These are not statements one would expect to hear during a flood, but they are how AquaFence clients describe their experiences using the product.

Read on to learn how AquaFence could benefit you!



Contact BTS, Our Sole Australian Agent for More Information or to Order:



"We were very sure that all of the contents within the department would be safe."

—Sharri Lacher,
Sanford Health
Reproductive Medicine Institute
Fargo, North Dakota

bts BEAVER TECHNOLOGY SERVICES

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AquaFence
www.aquafence.com

*Providing Peace of Mind through
Revolutionary Flood Protection*



When you are called upon to protect assets and lives, it is critical that you feel confident in the flood protection system you choose. You require a system that is effective and proven and that instills in you peace of mind.

AquaFence is just that type of flood protection system. It is certified and highly effective, and, what's more, it is an environmentally-friendly investment. When you purchase AquaFence for your flood protection needs, you can rest assured that your community will be safe.

AquaFence is the optimal alternative to sand bags and levees. It provides peace of mind to communities, decision-makers, and other stakeholders and:

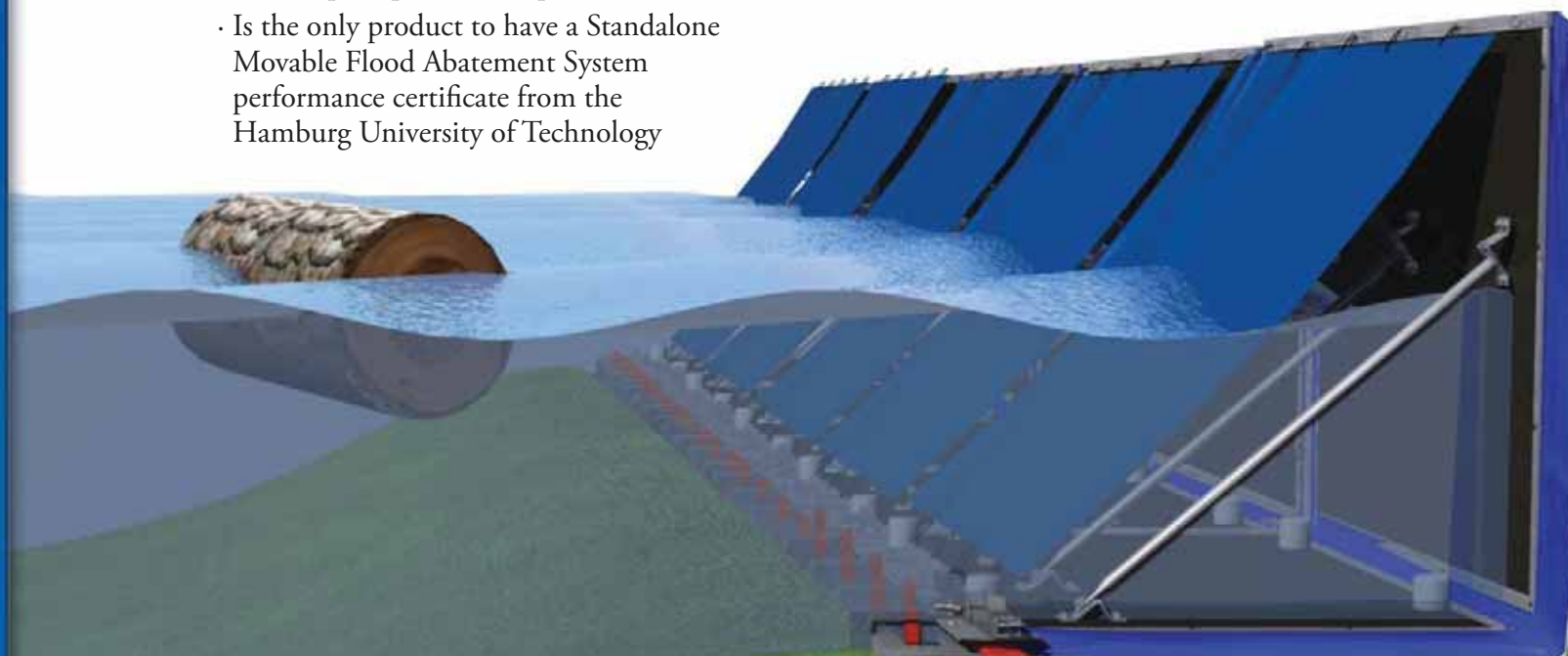
- Is mobile and reusable
- Significantly outperforms competitors regarding water seepage
- Can be easily deployed 1,000 times faster than sand bags
- Is a cost-effective investment with a long life cycle and high reliability
- Ensures minimal disturbance to communities
- Is a green product, as it does not absorb toxic waste, has no environmental impact on the deployment site, and reduces CO₂ emissions
- Provides flexibility and is available in a 120 cm (~4 ft) or 180 cm (~6 ft) height
- Is quickly disassembled, and can be stacked and stored easily in a warehouse
- Can help keep insurance premiums low
- Is the only product to have a Standalone Movable Flood Abatement System performance certificate from the Hamburg University of Technology

ABOUT AQUAFENCE

AquaFence is designed and produced in Norway, and the company serves flood-threatened communities throughout the world. Founded in 1999, AquaFence is known for the quality and effectiveness of its products and is proud of the high level of satisfaction its customers report.

HOW AQUAFENCE WORKS

AquaFence is made from marine-grade panels, aluminum, stainless steel, and canvas. The units use water as a stabilizer, so, as water rises against the wall, the system becomes stronger and less permeable.



Visit www.AquaFence.com today for more information or to find your local representative!



bts® *BEAVER TECHNOLOGY SERVICES*

FLOODBARRIERS



REMOVABLE SYSTEMS

REMOVABLE BARRIER SYSTEMS

These systems have the attachment points pre-installed on the structure. The actual barriers are stored away until time of need. The barriers are then re-mounted to the building using the preexisting fasteners.



RIGIDAM

The RIGIDAM system is a hard panel, removable flood barrier system. The panels are constructed of high strength aluminum components, and are edged by a gasket material that produces a water tight seal. The system is attached to the structure by pre-installed anchors and screws, and does not require a permanent frame attached to the building.

The barriers are designed to protect buildings up to a water level of 7'-6". Individual panels can be joined together to cover any width horizontally.

STANDARD HEIGHTS:

2'-0", 4'-0", 5'-0", 6'-0", 7'-0", 7'-6"

CAN BE DESIGNED TO ANY WIDTH

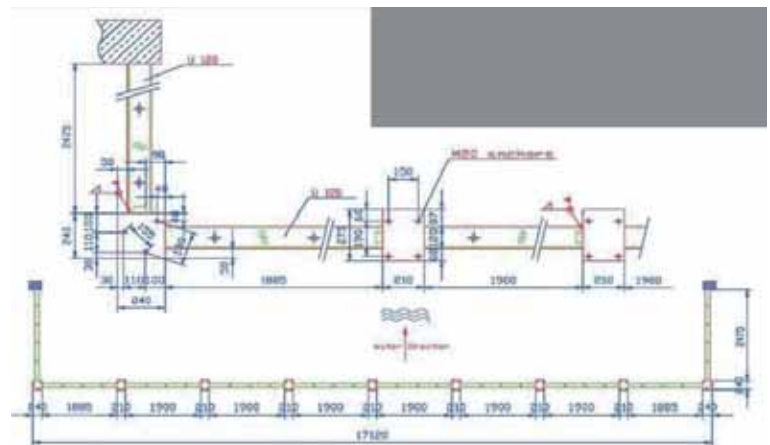


STOP LOG

The Stop Log system is designed and engineered for high velocity and heavy impact zones. The interlocking panels allow the barrier to resist almost any level of water. It can be mounted either directly over an opening, or designed to be a perimeter defense of an entire facility.

It can be supplied for virtually any configuration including arcs, closed rectangles or circles and straight runs of any length. The Stop Log system can be used on slopes of up to 20 degrees, and can be stepped for steeper gradients. Each system is load calculated based on application and the prevailing flood conditions.

There are 2 different panels sizes for standard and heavy duty applications.



REMOVABLE SYSTEMS

FLOOD GUARDS

The Floodguard system is a light weight barrier designed for fluvial / riverine flooding conditions, and light wind loads. It is mounted on to the structure with a narrow frame which is permanently mounted to the front of the opening to be protected. In a flooding emergency, the light-weight Flood guard is clipped into the frame in less than two minutes.

The Floodguard works on the lever arch-dam principal, with increased water levels and pressure giving rise to an increased efficiency in the guard to frame seal.

| Floodguard Types | Internal Measurement | External Measurement | Total Height | Guard Height | Weight |
|------------------|----------------------|----------------------|--------------|--------------|-----------|
| A | 36 1/4 " | 40 1/2 " | 37 1/4 " | 35 3/4 " | 15.43 lbs |
| B | 43 " | 47 " | 37 1/4 " | 35 3/4 " | 17.64 lbs |
| C | 48 3/4 " | 53 " | 37 1/4 " | 35 3/4 " | 24.25 lbs |
| D | 61 " | 64 1/2 " | 37 " | 35 3/4 " | 37.48 lbs |
| E | 73 " | 77 " | 37 " | 35 3/4 " | 41.89 lbs |
| F | 84 1/2 " | 88 1/2 " | 37 " | 35 3/4 " | 55.12 lbs |
| G | 97 " | 100 1/2 " | 37 " | 35 3/4 " | 59.52 lbs |
| H | 109 " | 112 3/4 " | 37 " | 35 3/4 " | 72.75 lbs |

| Floodguard Types | Internal Measurement | External Measurement | Total Height | Guard Height | Weight |
|------------------|----------------------|----------------------|--------------|--------------|-----------|
| AA | 36 1/4 " | 40 1/2 " | 25 1/2 " | 24 1/4 " | 8.82 lbs |
| BB | 43 " | 47 " | 25 1/2 " | 24 1/4 " | 11.02 lbs |
| CC | 48 3/4 " | 53 " | 25 1/2 " | 24 1/4 " | 17.64 lbs |
| DD | 61 " | 64 3/4 " | 24 1/4 " | 24 1/4 " | 24.25 lbs |
| EE | 73 " | 77 " | 24 1/4 " | 24 1/4 " | 33.07 lbs |
| FF | 84 1/2 " | 88 1/4 " | 24 1/4 " | 24 1/4 " | 39.68 lbs |
| GG | 97 " | 100 1/4 " | 24 1/4 " | 24 1/4 " | 41.89 lbs |
| HH | 109 " | 112 1/2 " | 24 1/4 " | 24 1/4 " | 50.71 lbs |



HINGED BARRIER SYSTEMS

These systems are permanent, in place systems that operate either horizontally or vertically on a hinge or pivot. They require minimal human intervention to fully close and operate the system.

HINGED GATES

Our NEW GENERATION *aluminium* flood gates are approximately 70% lighter than equivalent steel gates and, thanks to our unique “raise-swing-lower” mechanism, do not require recessed ground channels, raised ground beams or ramps, making them ideal for vehicle entrances and especially suitable for forklift or wheelchair access.

Even the widest gates can be operated by one person using the smooth winding lift action and the single point locking mechanism. And, of even more importance, the *aluminium* construction provides a far higher level of Operator Safety than heavy steel gates.

Available as single or double leaf gates, these systems are suitable for use in unmanned locations, are fully lockable and come complete with anti-theft and vandal resistant features.

For locations where a stepped entrance is acceptable, we also offer the same high standard *aluminium* gates with precision non-lifting swing hinges.





CONTENTS

- All-purpose Barriers
- Demountable Systems
- Design services
- Flood Defence Guidelines
- Gallery

Slot-In Flood Barriers

Introduced in 1994, thousands of slot-in barriers are currently installed in the UK and throughout Europe, and with a policy of continuous development and improvement the systems remain at the forefront of flood defence design

Designed for APPLICATION

- Can be installed on any flat watertight surface
- Heights 300mm to 2400mm (in 300mm increments)
- Opening width any size up to 6500mm in a single span
- Can be extended using removable intermediate supports
- Reveal, Face or Corner mounted support channels
- Custom stand-offs (up to 350mm) to clear weatherboards etc.
- Can also be installed behind doors (e.g. for Emergency Exits)
- Vandal resistant covers & security clamps to lock systems
- Can be finished in RAL colour to match decor
- Fully removable options for listed buildings
- Stainless steel options for salt water environments
- Can be left semi-permanently installed

Designed for CONVENIENCE

- Can be installed by any competent builder or DIYer
- Aluminium beams weigh less than 8kg per linear metre
- Ergonomically positioned carrying handles
- Quickly and easily erected by one person
- Modular design requires no specific skills or training to erect
- Storage brackets available for beams & components

Designed for DURABILITY

- Construction grade steel & aluminium components
- Steel fabrications hot-dip galvanised
- Patented seal design stops silt clogging
- All seals made with EPDM for weather and UV resistance
- Seals fixed in preformed channels and easily replaceable
- Twinned seals for extreme flood/impact conditions
- Suitable for constant daily use

Designed to STANDARDS

- Manufactured & tested to exceed DIN19569-4
- Steel sections manufactured to EN10027
- Fabrications hot-dip galvanised to ISO 1461:1999
- Heat treated aluminium extrusions to BS1474
- Stainless steel sections manufactured to EN10088
- Seals all Ethylene Propylene Diene Monomer (EPDM)
- All fixings Load Rated Hilti™ or Fischer™

ALL PURPOSE BARRIERS

Slot-In Flood Barriers

Modular design, interlocking components and custom manufacturing, combine to make this system the most versatile and advanced slot-in flood-board system currently available.



*Versatile Flood Protection
....robust and unobtrusive*



With a host of design features (see facing page) and the ability to protect openings of up to 6 metres wide against flood depths of up to 2.4 metres, this system is ideal for protecting doorways, loading bays, pedestrian walkways, shop fronts, in fact, virtually any opening that requires dependable defence against flooding.



The modular components, simplicity of design & aluminium beams with ergonomically positioned carrying handles, enable the system to be easily and quickly erected by one person - without the need for special skills or training.



DEMOUNTABLE SYSTEMS

Demountable Flood Defences

Our demountable barriers are engineered to provide similar levels of protection to permanent flood defences but with the distinct advantage of being fully removable when not required.

Demountable flood barriers can be supplied for virtually any configuration including arcs, closed rectangles or circles and straight runs of any length. The systems can be used on slopes up to 20° & can be stepped for steeper gradients. Each system is load calculated based on application and the prevailing flood conditions and can be configured for flood depths up to 4mtrs.



Ideal for protecting highways, long store fronts, wide vehicle entrances & for creating wide area flood defences, these systems can also be used to increase the height of concrete floodwalls, quaysides & dams.

To facilitate installation in new building projects, we supply pre-formed ground plates with integral anchors for the demountable supports. These incorporate concrete ties for load stability and tensile bars for welding to the foundation steel &, once installed, they present a totally flat ground surface and have an optional non-slip finish for added safety in pedestrian areas.



The systems can be retrospectively fitted to suitable existing foundations in which case load certified, chemically fixed, sleeved anchors are used to attach the demountable supports.



Purpose designed seals that resist silt clogging and will reform even after prolonged compression, together with vandal resistant covers and lockable clamps, make these systems ideal for locations where semi-permanent installation is a requirement.

The modular design facilitates storage & transportation and the ergonomically positioned carrying handles enable all but the higher systems to be erected without the need for mechanical lifting equipment.



Flood Barrier specialises in flood protection for commercial properties from office blocks and retail outlets through to factory units and industrial plants. It is our experience that with a well-planned scheme and by choosing the right products, virtually any building can be defended against external flooding. The following pages provide some guidelines on how to approach protecting your premises and give an indication of the versatility and utilisation of our product range.

1. Boundary & Perimeter Defences

Wherever possible, the first and best line of defence to be considered is around the boundary of the premises, if this can be achieved it will also protect vehicles & external plant and even allow you to continue operations during flood conditions.

Depending on the depth of the floods, it may be possible to incorporate existing boundary walls that are sound and have good foundations, into the defence scheme. These can be extended with our barrier systems to form a total perimeter, leaving entry points for vehicular and pedestrian access. If the existing walls are too low to provide adequate protection, it is often possible to increase the height by mounting a removable barrier on top of the wall.

Our engineers can advise you on the suitability of existing walls, design new walls for your specific flood conditions, or we can use our Demountable systems to form a fully removable defence around your entire premises.

2. Protecting the building entrances

If external perimeter defences are not practical, most buildings can be protected perfectly adequately by installing watertight barriers at doorways and vehicle entrances and sealing the various other water ingress points (see section 4).

The choice of protection system is dependant on a number of factors, including depth and turbulence of the flooding, amount of warning of impending flood events, availability of personnel to erect barriers and of course budget.

With the most comprehensive range of flood defence products available, whatever the size and configuration of the opening, however deep the flood waters; whether you are looking for fully demountable flood barriers, permanently fixed flood gates, or fully automatic self closing systems, we have the products capable of stopping flood waters from ruining your business.

3. Protecting vital plant & machinery

The prime consideration after a flood is to return to full operation as soon as possible, many organisations rely on specialised machinery, plant and computer systems that can take weeks or even months to be replaced. As an additional security measure, or in cases where it is just not practical to defend an entire building, we can use our barrier systems to create watertight enclosures around individual machines, or around whole internal sections of your building. These barrier systems are fully removable and their modular design ensures that they can be easily stored and rapidly erected when needed.

We can create self-supporting waterproof barricades to protect cellar hatches, ground level air intakes and ventilation outlets, external plant such as air conditioning units and power substations, in fact virtually any element of your business that needs protection from flooding.

cont....

Protecting Premises & Plant

....cont.

4. Other water ingress points

Obvious ingress points are airbricks and other air intake or outlet points, most vents can be protected with our removable flood seal covers, however, vents providing air to gas appliances must *never* be blocked and these will need to be relocated above flood level or protected with periscopic cowlings - always seek advice from a Certified Gas Installer before modifying this type of vent.

Water and sewage backing up through the drain system to overflow ground floor toilets and showers is also a common occurrence in flood events, our mainline backflow prevention valves are the ideal protection against sewage back surge.

It is easy to overlook service ducts and computer network cabling ducts when planning a flood defence, there are a number of proprietary products available for sealing ducts and your Facilities Manager is likely to be aware of these. If not we will be happy to provide you with details, however, we do not endorse or guarantee any third party products.

Weak or old mortar joints will allow a significant volume of water to enter the building, it is therefore important, to keep these well maintained using a waterproof pointing compound. Damp Proof Courses (DPC), expansion joints, cables and pipes running through the wall are all vulnerable to water penetration and should be sealed with a good quality mastic.

Most walls are not watertight and in situations where flood water is likely to stand for several days, you should consider treating the walls with a commercial waterproofing coating and for longer duration floods external tanking with a waterproof render system may be advisable.

5. Flood Defence Design Services

If you are experiencing severe or frequent flooding, you should consider a total flood defence scheme for your premises (or if several adjoining premises are affected it may be possible to set up a joint venture with your neighbours). Our engineers have many years experience in flood control and water management and can design a flood scheme to meet your specific needs. They can also advise on earth dykes, land drainage, bund wall construction, irrigation and pumping systems – in fact any aspect of flood control and prevention.

6. Installation Considerations

The final choice of scheme and product will also be influenced by any specific customer requirements and local flood conditions.

Where little warning is given of impending floods, or for frequent use pedestrian and vehicle access points, our hinged, pivot or automatic systems can be installed allowing closure at a moments notice. If the system is not required for daily use, our slot-in barriers provide the ideal solution and can be configured to suit most opening widths and heights. And, for those circumstances where semi-permanent installation is required (electricity sub-stations & wide area defences), the demountable systems will afford both long-term protection from flood waters and security against vandalism and theft with security covers and locking points as standard.

All of our systems have been designed to eliminate the need for raised or recessed ground channels reducing the cost of installation and increasing the usability of the system.

Our products are designed for easy installation and we supply full fitting instructions for all systems. They can be easily installed by your own maintenance staff or any competent General Builder - we can also provide a full fitting service where required. If you undertake to self-fit the products, we offer a free inspection of the finished installation to ensure that it conforms to our specifications.

Retail Solutions



Store front - before installation



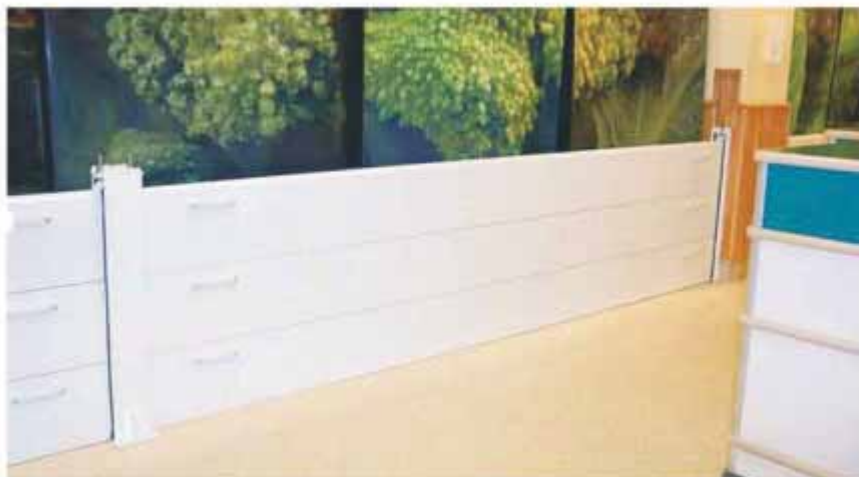
Store front - after installation



Retail Solutions



*Smart, Space-saving
& Secure*



Community Defences

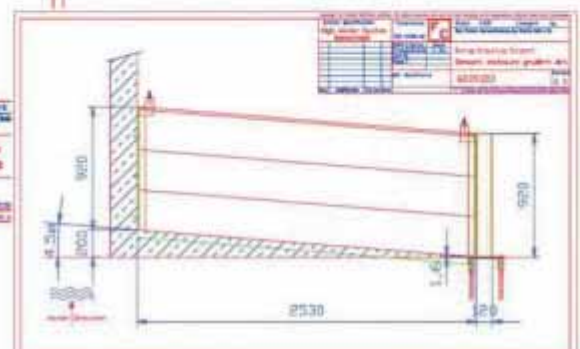
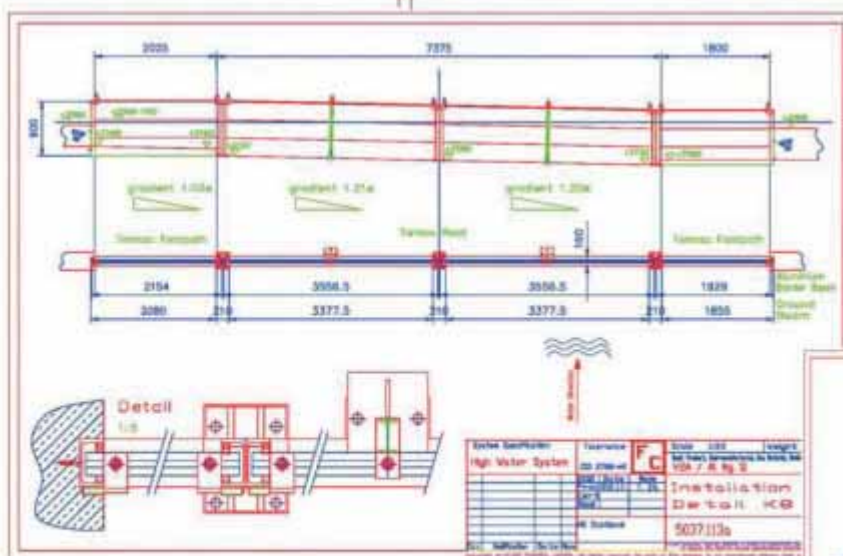
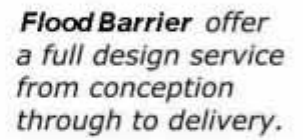


Community Defences



Miscellaneous







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