

WATERPROOFING *NEWS*

SUMMER 2003

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BASEMENTS ARE BACK IN STYLE



Excavation carried out with military precision

Basements were a popular feature before and during the Victorian era, mainly due to the dense inner city population, and the shortage of suitable space for building. After WW1 low cost housing became a priority, and large areas of land were released to accommodate this.

realised that in this overpriced market, the basement option is hard to ignore. If you have unused space partially or completely below ground, the investment in a basement refurb can add a complete new floor to your property, providing quality space for living, leisure, utility or storage. It will also add value and saleability to your property.



Wide choice of finishes

Urbane home owners without subterranean space are not left out of the basement boom, far from it. Retrofit basements are well established in the UK. This is the

method of micro tunnelling under your property, and creating a completely new floor underground, following the footprint of the building. Specialist Retrofit contractors offer the complete package, working with in-house Architect & Structural Engineer. Excavation, underpinning & other structural work is carried out with military precision. Drainage, waterproofing, and insulation are carried out with a high level of expertise, as are the decorative finishes. Natural light & ventilation are designed into the basement, to make it an attractive addition to the property.



Windows provide natural light into basement.

Special points of interest:

- **SUMPS AND PUMPS**
Delta expand their range of drainage options.
- **RIBA CPD NETWORK**
Delta are members of the RIBA CPD Providers Network. 
- **NBS PLUS SCHEME**
Delta are also members of the NBS PLUS scheme which also includes Specification Writer and entries in the RIBA Product Selector. 
- **National Homebuilding & Renovating Exhibition @ NEC 4th-7th March 04**
For FREE tickets call Delta 08707 472181 or register free on the Delta website: www.deltamembranes.com
- "Any worthy stories, site tips, interesting or unusual projects?
Send them in to The EDITOR Brian Davison.
A prize for each one printed!



Underpinning of structure

The British basement was neglected for much of the last century but the last decade has seen a big revival in basements, and now they are back in style. Modern construction methods and waterproofing techniques have been key factors in this, allowing basements to be designed and created in various ways; New build, Refurbishment, and Retrofit (as illustrated).



Excavation to extend basement.

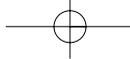
With rising land costs and shortage of prime sites, some of our National house builders, and the self-build sector have recognised the benefits of basements, and are maximising the space available. Larger homes can therefore be built competitively on smaller sites. Property owners looking to 'up-size' have also



New rear access to garden



The investment will be reflected in the increased valuation of your property.



WATERPROOFING NEWS

DRAINAGE OPTIONS

When specifying a sealed cavity membrane system, full consideration must be given to drainage, when installed below ground.



The concept of the drained cavity system is to collect and manage any moisture which breaches the integrity of the structure by channeling, collecting, and discharging such free water via a suitable evacuation point."

Channels, laid to a nominal fall, can discharge passively into a sump or be connected to a drainage system but access for maintenance should be provided.

DELTA SUMPS + PUMPS

Access ports allow inspection and water jetting of channels, while sumps have a sealed access cover which allows for annual maintenance checks to be carried out, which are recommended

If drainage has been installed, it should be flood tested before covering it up to make sure the system works.

Delta offer a choice of sump+pump stations to fit the purpose, and free advice is available from their technical staff.

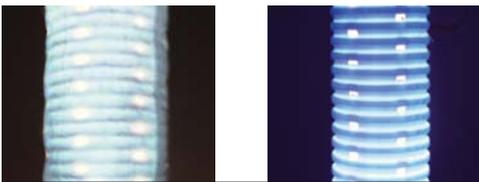


Delta Retrofit sumps are fitted with a dual pump system and have three 110mm side inlets to take ground water, and grey water from shower, laundry and sink waste

DELTA -AQUADUCT

Delta Aquaduct is a drainage channel which acts as a perimeter conduit bedded in at the floor/wall angle. Where appropriate, it can be laid under the slab to take off ground water to a sump or soak away, and reduce flotation pressures from baring on the slab.

Delta Aquaduct is fully perforated for maximum performance, and incorporates an outer geotextile filter to prevent particles



Aquaduct shown with and without filter

DELTA CHANNEL

from entering the channel. The product comes on a roll 150m x 60mm diameter. It is also available in 100m x 100mm dia rolls.

Delta Channel is a water collection conduit which is bedded into a preformed channel at the floor/wall angle. Holes in the channel wall allows water to ingress at this point to drain away to a sump or soak away. Access ports are available to allow maintenance and inspection.



POWER FAILURE?

If you've installed a cavity drained system internally, one of the main design considerations is how are you going to manage the water collection and discharge. This can be done passively into existing drainage points, if available and appropriate.

However, the majority of projects require a collection sump + pump, to automatically manage the evacuation of any water ingress. This type of unit requires mains power to operate, so what can be done if the power fails, and is coincident with high water ingress? Here are two options from **Delta**.

HELP IS AT HAND

High water level alarm - This system gives an audible warning if a high level situation occurs. It is fitted with it's own rechargeable battery, which is trickle charged , and will still operate in the event of mains power failure.

Delta Power-Pack -This unit is designed to run the pumps if a power failure occurs. The unit is trickle charged under normal conditions, and will auto switch to battery power if mains power fails. The unit will pump approx. 6,500 litres in back up mode but this can be upgraded by adding up to ten extra power units. Adding one unit raises the capacity to 20,000 litres.

'FREE LIME' RISK

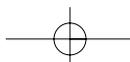
When new concrete forms the structure, to walls or particularly floors, there is a risk of excess free lime leaching out during the curing process.

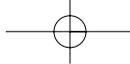
When a cavity drainage system is used in this type of application, a silicification pre-treatment of the concrete should be used to prevent the risk of free lime build up, and blockage of the drainage cavity.

Delta Keisol is applied as two spray coats for this purpose, and is available in 30kg drums.



DELTA POWER-PACK
Pumps 6,500 Ltr. in back up mode.





WATERPROOFING NEWS

HYLANDS HOUSE, CHELMSFORD

DELTA upgrades Essex landmark

Hylands House, Chelmsford, Essex, circa 1730, originally designed by Humphrey Repton, has just undergone a major refurbishment of the west wing.

Delta System 500 has been used to upgrade extensive brick vaulted cellar areas, which were suffering from the effects of damp penetration and salt deposits but now conforms to a Grade 3+4 Type C structure

Registered Installers Renlon Ltd. Used 2000m² of Delta-MS 20 for the floors and Delta-MS 500 for the walls and soffits areas. Now that the damp problems have been addressed, the previously unused areas are to be used for a combination of dry storage,

utilities and public areas. The building is now a tourist attraction, and Parts of the building are also used for civil wedding ceremonies and receptions.



Hylands House, Chelmsford, waterproofed by Renlon Ltd. Using Delta System 500.

Delta System 500 has enabled 'Hylands House' to be upgraded to a Type 'C' structure conforming to Grades 3+4 of BS.8102:1990 - Table 1

BARN CONVERSION

PROJECT PROFILE

Deans Farm, Stratford Sub Castle

LSE Building Preservation Ltd has converted agricultural buildings including barns and stables into offices, for Lord Chichester.

The barns have been waterproofed and upgraded to a grade 3 structure in accordance with BS.8102, Table 1. They are now let as valuable office space to stockbrokers, employment & marketing consultants. The barns were built of brick, and had painted or contaminated walls suffering from rising and penetrating damp, and salts from animal urine. One of the barns was used for furniture stripping, and the walls were contaminated with caustic stripper. **Delta-PT** was used on the walls, and finished with plasterboard on Drywall



dabs and a skim coat of Thistle Multi finish. The stable block was over boarded with thermal insulation Board.

By using **Delta-PT**, which is an inert HD-PE, the preparation required was minimal, reducing downtime, residual drying time, and project costs.

THE RIGHT TOOLS FOR THE JOB.

Contractors involved in the assessment of basements, and the specification of waterproofing systems, have a duty to advise or address environmental conditions as detailed in CIRIA REPORT 139, Table 2.2 which gives guidance on the functional requirements for basement usage, grades 1- 4.

To be able to achieve this, the specialist surveyor should have the right tools for the job. The Protimeter **Hygromaster** and surface temperature sensor has the ability to measure the %RH, ambient and surface temperature, and also calculate Dew Point.

On the occasion when a cementitious tanking system has been applied and the customer is concerned with the moisture beading on the surface, with the aid of the **Hygromaster** you are able to demonstrate scientifically that it really is a condensation problem.

This equipment is available separately or as an integral part of the **MMS Meter**, both valuable pieces of equipment are available from Delta Membrane Systems.

Delta System 500

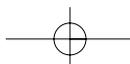
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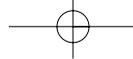


Hygromaster measures relative humidity (%RH)



Moisture meter that also determines condensation





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DELTA PROTECTS PROPERTY



TECHNICAL DRAWINGS available in AutoCAD format + DXF files



CAD drawings available on CD

Delta have a selection of technical drawings available in AutoCAD format or uncompressed format as DXF files.

These are available on CD, FREE to architects and professional users or they can be downloaded from their website.
www.deltamembranes.com

The drawings are also produced in hard copy A4 sets, and available from Delta.

Tel. 08707 472181

DELTA MEMBRANE SYSTEMS Ltd are the UK partners of Dorken GmbH & Co KG, the worlds leading manufacturer of cavity drainage membranes. Their area of operation extends across the united kingdom and Ireland.

Their range of membrane systems provides waterproofing solutions for many types of applications, whether it's for new or existing buildings, above or below ground, including; refurbishment, conversion, basements, new build, retrofit, construction, tunnelling, and civil engineering projects.

Delta Membrane Systems are holders of BBA certificate 00/3742.



All membrane systems are manufactured under a quality system in accordance with DIN EN ISO 9001.

TECHNICAL SUPPORT

Full technical support is available to contractors, architects, surveyors, and engineers. Delta can be consulted through all stages of a project. **TEL. 08707 472181**

CPD / TRAINING COURSES

Delta are committed to education, and operate a regular training program for contractors and surveyors.



We also offer CPD presentations, and we are members of the **RIBA CPD PROVIDERS NETWORK AND NBS PLUS SCHEMES.**



FLOOR PROBLEMS SOLVED.

Damp Concrete Floor Problem? "No Such Thing!"

We all know that excessive moisture/damp and timber floors do not go together. Generally the more expensive the timber the more it gets affected.

So there we are, turning work away because:

- The concrete sub floor is too new and still needs to dry for at least 50-60 days.
- The existing floor we are looking at shows obvious signs of dampness.
- We have done our moisture content test of taping a square of polyethylene to the floor and finding after removal that the area is discoloured with evidence of water droplets on the underneath of the film, or if available we carry out a deep probe Protimeter test, which only proves the former. You may wish to continue with the contract and suggest that you: -

Lay a 1000 gauge d.p.m. down first but this may increase the problem, as it is not vapour

proof and causes sweating, not to mention the relative short term life span of polythene; Or a two coat epoxy floor covering, but this is expensive and requires a drying time thus delaying the floor installation and putting the room out of commission. Alternatively, you may have heard of **Cavity Drainage Membrane systems** which have been used for damp-proofing, and in aggressive water situations below ground for waterproofing.

For general floor use, where there is only a capillary or residual moisture problem, which would affect timber flooring, screeds or other finishes, Delta offer either **Delta-FM** or **Delta-MS** grades of membrane.

Both are specifically designed for floor applications, to combat dampness, and contamination. The special low stud profiles (3mm) of **Delta-FM** or (8mm) of **Delta-MS** minimizes changes in floor levels, but still provide an air gap to achieve damp pressure equalization.

The membranes are a fast-track solution allowing various floor finishes to be achieved with zero 'down time'.



The %R.H. Levels are isolated in the air gap, and controlled. Delta membranes can be used in new build, remedial or refurbishment projects for floors, and walls.

