

# SHORING OF FLOOD DEFENCES IN EMERGENCY

## GDANSK, POLAND

### EMERGENCY WORK

#### Product: FlexMac® DT

#### Problem

In the afternoon of July 9th 2001, 90mm of rain fell onto Gdansk over a period of 2 hours. Normal average rainfall for the whole month of July is 75mm.

The subsequent flood inundated towns and streets in the area, destroying hundreds of homes. Over 130 buildings had to be demolished following the flood.

In the immediate aftermath of the flood, damaged infrastructure had to be reinforced quickly and cost effectively.

In one area, a river embankment had been breached. Services within the bund were exposed and a rapid solution was required to reinstate this protection bund.

#### Solution

A sheet-piled wall was quickly installed to provide immediate protection against the flood. This shallow structure was not suitable for use as a long term solution and it needed to be buttressed by a suitable mass gravity structure.

FlexMac® DT offered an ideal solution being rapid to deploy and fill.

FlexMac® DT elements are modular structures made from double twisted, heavily galvanized steel wire mesh panels, reinforced with vertical steel bars. The cells are connected together in the factory and then folded to reduce shipping volume and facilitate rapid deployment.

Each cell within the FlexMac® DT unit is lined with a geotextile which is fastened to the double twist wire hexagonal mesh during the manufacturing process.

The FlexMac® DT elements arrive on site in bundles wrapped in plastic for protection during freight and storage.

The transportation of the single FlexMac® DT unit is very simple and can be done manually. To deploy and assemble a single unit requires only 2-3 people and takes 20-30 seconds.

Client:

CITY OF GDANSK, POLAND

Designer:

LOCAL NATIONAL EMERGENCY SERVICES

Products used:

FLEXMAC® DT

Date of construction

July 2001



During flood. Breached embankments exposing services



During flood - view of street showing bund before breach



Aftermath of flood - view of street showing breached bund

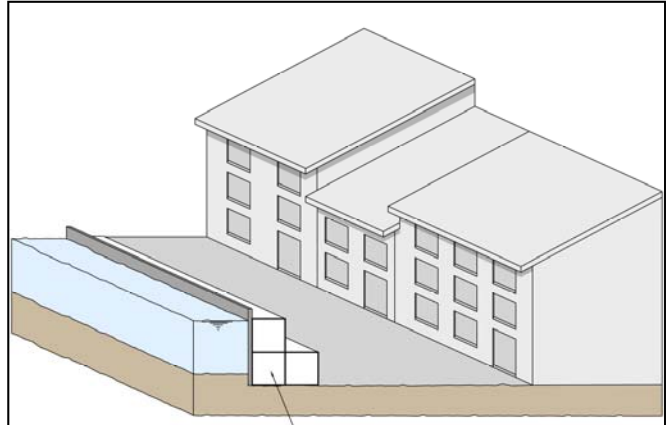


Aftermath of flood

# MACCAFERRI

Flexmac modules can be filled with many types of fill material and can be done either manually using shovels or using any suitable mechanical plant on site.

Following the deployment of the units into position, they were filled using an excavator. Three layers of FlexMac® DT were stacked to form a mass gravity retaining wall (the cross section was thicker at the bottom than at the top of the wall).



Schematic of solution



The damaged channel



Deployment of FlexMac® DT



FlexMac® DT



Filling the FlexMac® DT layers

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