

people died in Dernau and around 90 percent of the residents of the town of 1,800 are affected by the damage caused by the floods.

Dernau

• On July 14th, the water reached a record height of seven metres, when torrential rains turned the river into a forceful rush of water that swept away cars, homes, even major infrastructure.

• The village of Dernau which is centrally located in the Ahr valley is famous for its wines. Besides agriculture, tourism is a strong economic factor.

 $\bullet\,$ Dernau was hit hard by the flood disaster on July 14th and 15th, 2021. eleven

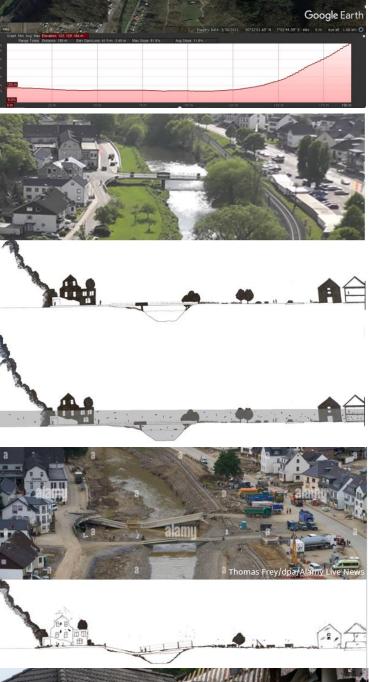
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Oliver Schopgens















6th October, 2021

Thomas Frey/dpa Gettyimages Natalie Carney/CBC



Workshop 02- What Happens?



14th December, 2021

23rd July, 2021

21st July, 2021

80th November, 2021

The bridge over the Ahr river in Dernau which was destroyed during the flood is not rebuilt. An armored bridge is built instead.



The Kölner Hof hotel and restaurant (350-year-old building) is demolished.

Workshop 03- What Should Happen?

destroyed

everely damaged

Dernau relies on mobile homes in the middle of the village for the flood victims.



In Dernau almost the whole village was flooded. After making the

map of the damaged buildings, I propose not to rebuild in the areas in which the buildings were destroyed or severely damaged.

In the other areas we can rebuild but we should build differently.

In this phase of my project, I have focused on the historic halftimbered houses (not only in Dernau but in the whole Ahr Valley)

Around 500 half-timbered houses in the Ahr Valley are affected by

In most of the areas like Walporzheim and Bad Neuenahr-Ahrweiler only the ground floors were often flooded; but in Dernau the water

The compartments of half-timbered houses are self-supporting, which

Uses levees, door seals and walls to stop water from entering the house. Because of the strength of flood forces, this method is generally not recommended if flooding is anticipated at levels higher than three feet, particularly for unreinforced masonry.

event. Openings or flood vents are required to allow water to flow

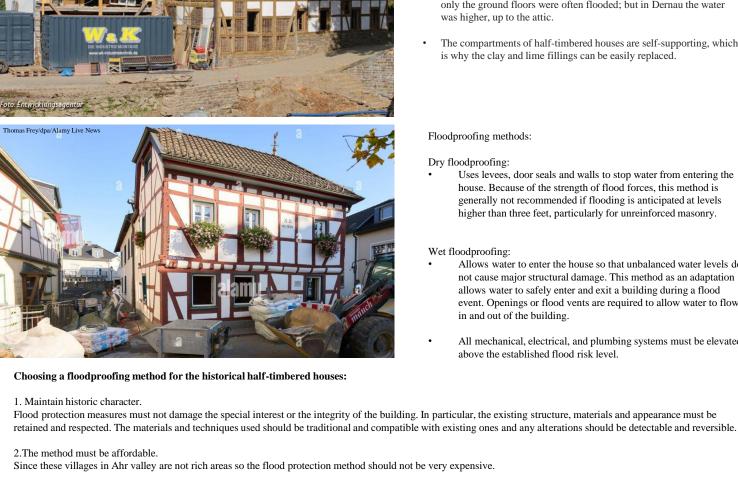
All mechanical, electrical, and plumbing systems must be elevated

and how to develpoe them into a flood-proof structure.

is why the clay and lime fillings can be easily replaced.

The Dernau kindergarten is also demolished.

Some buildings have been spray-painted with words of love, support & hope.



Electrical & mechanical

References:

Wet floodproofing: Allows water to enter the house so that unbalanced water levels do not cause major structural damage. This method as an adaptation allows water to safely enter and exit a building during a flood

in and out of the building.

above the established flood risk level.

Floodproofing methods:

Dry floodproofing:

was higher, up to the attic.

Large landing

Wide stairs for ease of moving furniture Attic space for

emergency storage

- Construct external ground floor walls in double brick or masonry for strength and ease of repair Allow water entry and exit via vents and flaps to balance internal and external water pressures. AHRTVde, (2011). DERNAU - Perle im AHR-TAL. Available at: https://www.youtube.com/watch?v=0wKIRWDvFt4&t=140s (accessed: 1.2.2022) Ahrtal im Februar 2022 - Bilder des Ahrufers von Dernau bis Rech (2022). Available at: https://www.youtube.com/watch?v=dP64nfMeqqU_(accessed: 8.3.22) Blick Aktuell, (2022) Dernau: Tiny houses are mostly inhabited. Available at- https://www.blick-aktuell.de/Berichte/Dernau-Tiny-Houses-sind-groesstenteils-bewohnt-499715.html (accessed: 10.3.22) Blick Aktuell, (2022) The Dernau kindergarten is also demolished. Available at https://www.blick-aktuell.de/Berichte/Auch-der-Dernauer-Kindergarten-wird-abgerissen-483162.html?fbclid=IwAR00IYw4ls6XpVNg-fvfV6s34qR9eqJ29YFtlooVKhLiv03mjEqfoiziNZY (accessed: 5.3.22) $Dernau\ Alsheim\ hilft\ (2022).\ Available\ at: \underline{https://www.youtube.com/watch?v=BW3CBRfQCbs}(accessed:\ 6.3.22)$ $DERNAU-Perle\ im\ AHR-TAL\ (2011).\ Available\ at: \\ \underline{https://www.youtube.com/watch?v=0wKIRWDvFt4}\ (accessed:\ 17.2.22)$ Eggleston J, Parker J, Wellock J 2021, THE SECRETARY OF THE INTERIOR'S STANDARDS FOR REHABILITATION & GUIDELINES ON FLOOD ADAPTATION FOR REHABILITATION FOR REHABILIT Förderverein Zukunft Dernau eV, (2021). Flood disaster in the WeinKulturDorf Dernau from 14./15.7.21. Available at: https://www.dernau.de/events/flutkatastrophe-vom-14-15-7-2021/(accessed: 15.2.22) King Neil, Muller Natalie (59640272 -a/semoh-gnidliuber-uanred-ynamreg-gnidoofl-egnahc-etamilc/ne/moc.wd.www//:sptth :ta elbaliavA ?etacoler ro dliuber :doofl eht reftA .(2021accessed: (11.02.2022)
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