

Adaptation is the only and right way forward because the world around us is constantly changing.

THE MOST INNOVATIVE FUTURE OF WATER MANAGEMENT.

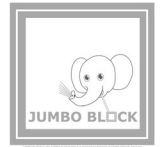
Flood protection

Rainwater retention

Water storage

seepage

JUMBO BLOCK® in modular design is the largest system for retention and water storage.



Use 1: Retention space, channel

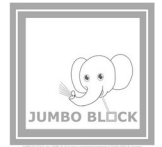
- **Requirement:** Careful planning and preparation is essential:
 - Geological survey: analysis of the soil to test its suitability.
 - Surveying: Determination of the optimal positions for inlets and drain paths.
 - Sewer cadastre/plan: review and adaptation to the existing infrastructure.

- **Technical execution:** The following steps are carried out here:
 - Inlet: Construction of inlets for supplying water.
 - Throttle: Installation of regulating mechanisms to control water flow.
 - Pumps: Integration of pump systems for drainage.
 - Waterproof Seal (WD): Ensuring a reliable seal.

Use 2: Rainwater storage

- **Requirement:** Requires comprehensive pre-planning and testing:
 - Geological survey: Analysis of the subsoil for site selection.
 - Surveying: Determining the appropriate positions for inlets and outlets.
 - Location/size of the inlets: Determination of the optimal inlet points for rainwater.
 - Water drainage planning: Planning water removal and drainage.

- **Technical execution:** The following steps are implemented:
 - Inlet: Construction of facilities for water intake.
 - Pumps: Integration of pump systems to use and forward rainwater.
 - Bentonite waterproofing: Use of geosynthetic clay waterproofing membranes for a secure seal.



Use 3: Flood retention, river/lake

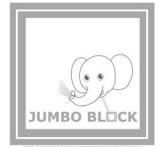
- **Requirement:** A thorough preliminary investigation and planning are required:
 - Geological investigation: Examination of the terrain for an optimal location selection.
 - Surveying: Determining the ideal positions for inlets and outlets.
 - Location/size of the inlets: Determination of the inlet points for floods.
 - Location/size of the outlets: Determination of drainage options.

- **Technical execution:** The implementation includes:
 - Inlet: Construction of water collection facilities.
 - Outlet: Construction of structures for controlled water drainage.
 - Bentonite waterproofing: Use of clay waterproofing membranes for waterproofing.

Use 4: Water storage for contaminated water

- **Requirement:** Careful planning and preparation is essential:
 - Geological survey: Analysis of the soil to test its suitability.
 - Surveying: Determination of the optimal inlet positions and drainage paths.
 - Location/size of the inlets: Determination of the inlet points for contaminated water.
 - Water drainage planning: Planning disposal options for contaminated water.

- **Technical execution:** The following steps are carried out here:
 - Inlet: Construction of facilities to absorb contaminated water.
 - Throttle: Installation of regulating devices to control the flow.
 - Pumps: Integration of pump systems for drainage.
 - Joint Seal (FD): Application of a joint seal for sealing.



Usage 5: Transport channel

- **Requirement:** Requires comprehensive pre-planning and testing:

- Geological survey: Analysis of the subsoil for stability and condition.
- Measurement: Determination of suitable entry points and dimensions.
- Location/size of the inlets: Determination of the inlet points for water.
- Check the size of the connection channel: Check the capacity of the connecting pipe.

- **Technical execution:** The following steps are implemented:

- Inlet: Construction of water supply facilities.
- Outlet: Construction of structures for controlled water drainage.
- Pumps: Integration of pumping systems to handle water transport.
- Waterproof Seal (WD): Ensuring a reliable seal.

Norm/law/guideline:

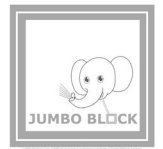
Compliance with current regulations and laws in each country is crucial. Due to the unique nature of this project, the new technology should be coordinated in detail with the local authorities. While water laws, water resources laws, building codes, building codes and environmental protection laws are important legal frameworks, they may not fully take into account the specific requirements and innovations of the new JUMBO BLOCK technology. Because this technology offers novel approaches to water management and flood protection, its unique features and use cases may need to be integrated into national and international laws and regulations. This requires a thorough review and adaptation of the existing legal framework to ensure that the JUMBO BLOCK technology is appropriately considered and regulated to ensure its full effectiveness while protecting environmental protection and safety.

Standards for building seals:

Standards such as DIN 18195 in Germany or international standards such as ASTM D4225 specify requirements for seals in buildings to prevent water penetration.

Standards for pumping systems and drainage technology:

Standards such as DIN EN 752 for drainage systems or DIN EN 12056 for rainwater drainage systems can provide relevant requirements for the technical implementation.

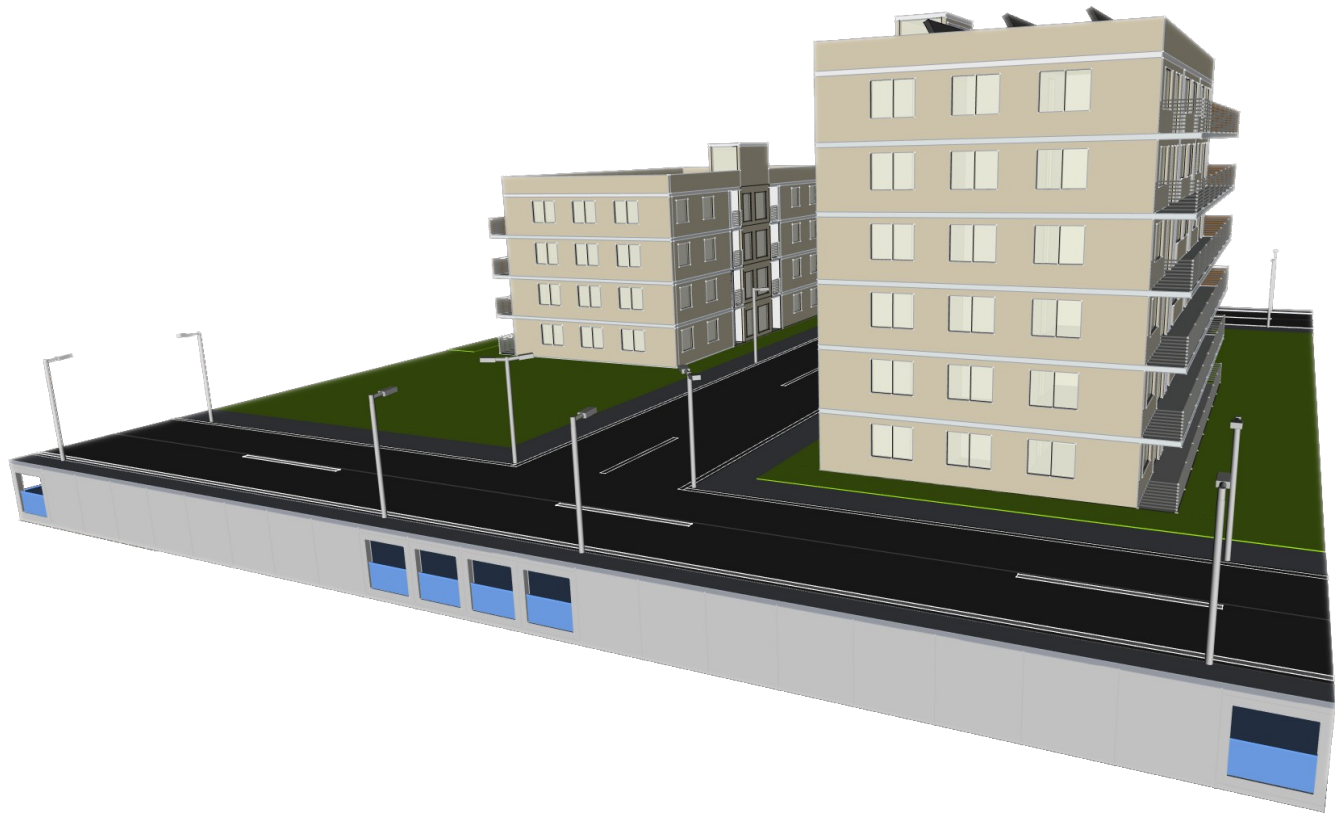


Explanation of terms:

- **WD:** “Waterproof” (WD) is a label used to describe materials or structures that are impermeable to water. In construction and engineering projects, the term "waterproof" is used to denote structural elements, coatings, or waterproofing systems that prevent water from entering or exiting a structure. Waterproof materials and construction are critical to protecting buildings, tunnels, dikes and other infrastructure from moisture damage and water intrusion.

- **Bentonite:** Clay geosynthetic membranes, referred to as bentonite, are specialized materials used in construction and environmental projects to create waterproofing and barriers. Composed primarily of clay minerals such as montmorillonite, they are used to reduce the permeability of soils and control water flow. Bentonite is used for the JUMBO BLOCK systems in combination with other materials such as geotextiles to improve its performance.

- **FD:** “Joint Sealing” (FD) refers to materials or techniques used to seal joints or gaps between building elements or materials. In construction and engineering projects, joint-sealing materials are often used to prevent the ingress of water, air, dirt or other substances. These materials can include, for example, sealing tapes, sealants or special coatings. The application of joint sealants helps to improve building integrity, increase energy efficiency and prevent the ingress of moisture or contaminants.



Simply store away heavy rain in built-up cities!

In the era of climate change, preventive measures against rain and floods are crucial as weather dynamics change and precipitation becomes more intense. Innovations that are in harmony with environmental protection make a significant contribution to improving the quality of life by enabling sustainable solutions to current and future challenges.

Our groundbreaking technology turns roads into versatile surfaces that not only act as giant retention basins, but also effectively prevent flooding.

Through the intelligent and environmentally friendly use of rainwater, we actively combat water shortages by storing water efficiently.

Discover the diverse benefits of JUMBO BLOCK® for a sustainable and water-rich future - a vision that hydrologists have been calling for for a long time!

The limitless retention capacity offers an excellent opportunity to adapt flexibly to changing climate and weather conditions.

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