AES-Solution

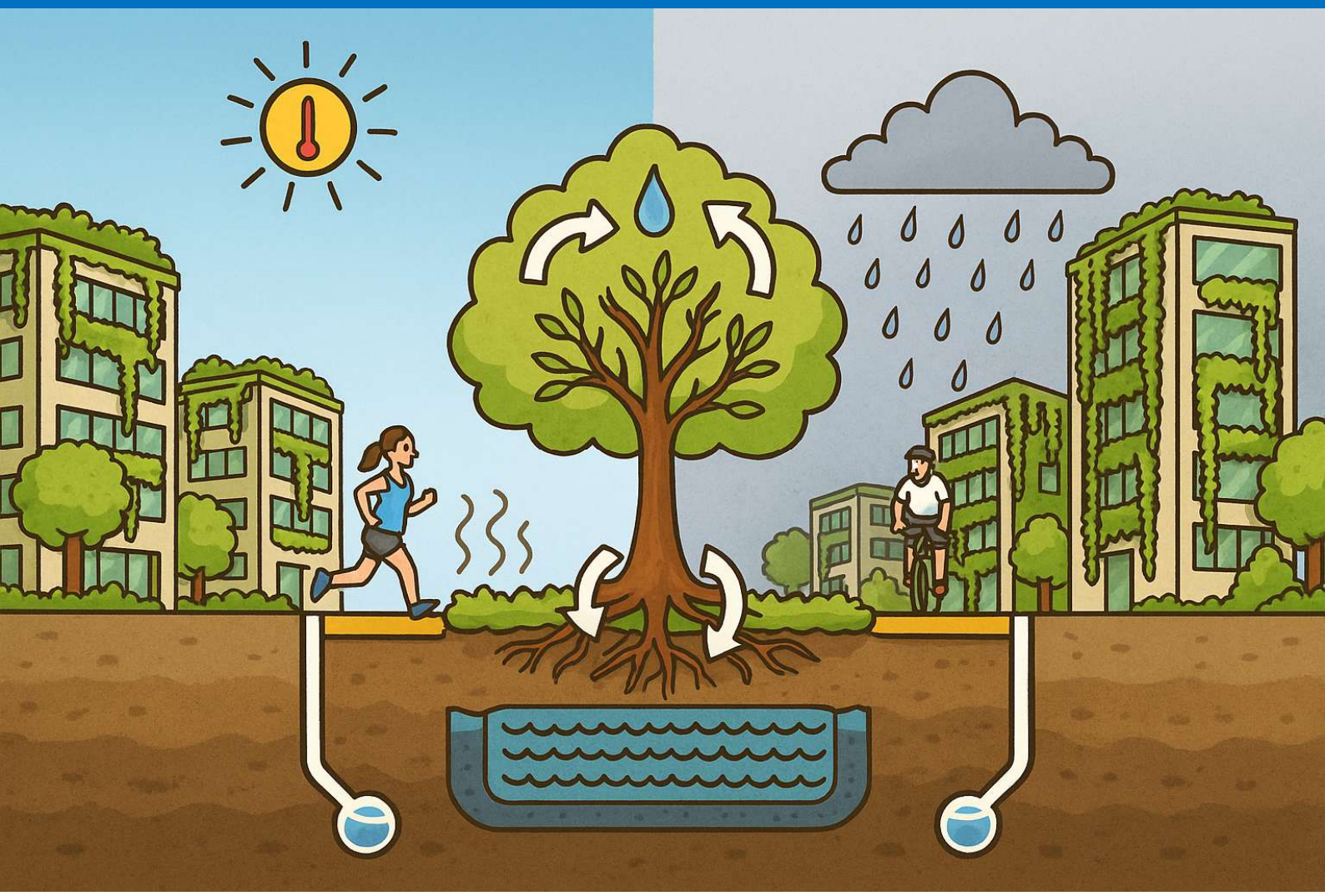
A-ES GROUP CONSTRUCTION

# Shaping the Future with Blue-Green Infrastructure & Sustainable Urban Development
# Consulting. Development. Implementation.

**Holistic solutions for municipalities, businesses, and private construction projects.**

www.aes-solution.com

# Welcome



**Shaping the Future Together**

Extreme heat, heavy rainfall events, sealed surfaces, and declining biodiversity present major challenges for cities and construction projects.

We combine practical expertise with concrete, implementable solutions to make cities, districts, and buildings more resilient, climate-adapted, and livable.

This catalogue provides a concise overview of our services and approaches in the fields of blue-green infrastructure, sponge city concepts, ecological building materials, and climate-resilient building design.

# About us

**The Vision Behind AES-Solution**

AES-Solution represents holistic, sustainable planning and construction – from blue-green infrastructure to climate-resilient buildings. Founded with the goal of bringing sponge city concepts and ecological construction methods more strongly into focus, we provide practical consulting and tailored solutions for climate-resilient cities, businesses, and private projects.

Based on international project experience, we support our clients from analysis through planning to implementation – with a strong focus on depaving, stormwater management, urban greening, innovative building materials, and sustainable construction concepts such as timber frame construction.

**Unsere Leistungen richten sich an:**

- Municipalities & cities
- Companies & investors
- Private developers

**AES-Solution – for a livable, future-ready environment.**

# Values That Guide Us

**Our work is based on clear principles that guide and drive us every day.**

**Think holistically** – Infrastructure, buildings, and the environment: future-proof solutions only emerge through integrated systems thinking.

**Provide practice-oriented consulting** – We do not develop theories, but actionable concepts – well-founded, understandable, and directly applicable.

**Take responsibility** – For the environment, society, and future generations.

**Work in a connected way** – Collaboration with experts, authorities, and stakeholders on an equal footing – to ensure robust and adaptable solutions.

# Our Service

## We offer a comprehensive range of services to bring your vision to life:

### Overview of our services:

**Strategic Planning** – Concepts for blue-green infrastructure and sponge city development
**Depaving & Materials** – Planning of permeable surfaces and use of ecological building materials
**Stormwater Management** – Retention systems, infiltration solutions, and sustainable utilization concepts
**Greening Solutions** – Green roofs, green façades, and landscape greening
**Sustainable Construction** – Timber frame construction, project management, and strong professional networks

# Blue-Green Infrastruktur (BGI)

## What is Blue-Green Infrastructure?

Blue-Green Infrastructure (BGI) describes the integrated combination of water management (blue) and greening strategies (green), with the aim of making urban spaces climate-resilient, livable, and ecologically future-proof.

## Typical measures of Blue-Green Infrastructure:

**Stormwater Management**

•Retention systems, cisterns, and infiltration systems for local temporary storage of rainwater
•Rainwater utilization for irrigation, greywater applications, or evaporative cooling

**Depaving**

•Removal of sealed surfaces (e.g., asphalt, concrete)
•Replacement with permeable surfaces such as water-bound gravel paths, grass pavers, gravel turf, or permeable joint paving

**Greening**

•**Green roofs:** Intensive or extensive green roof systems for water retention, cooling, and biodiversity enhancement
•**Green façades:** Climbing systems, living walls, and façade greening solutions with climate-regulating effects
•**Green islands & tree planting areas:** Vegetated zones with integrated water storage for cooling, air quality improvement, and the enhancement of urban greenery

**BGI is not an add-on, but a response to many of the central challenges of our time: How do we respond to heatwaves, heavy rainfall events, and the loss of urban biodiversity? How do we create cities in which people and nature can once again coexist?**

**Through holistic planning and practice-oriented implementation, blue-green infrastructure can be integrated at almost any scale – from single-family homes to large-scale urban projects.**

# Spongecity

## What is a Sponge City?

The sponge city concept aims to locally absorb, store, and gradually release rainwater instead of discharging it directly into the sewer system. This helps prevent flooding, improves the urban climate, and enables rainwater to be used as a valuable resource.

## Typical measures of the Sponge City concept:

**Rainwater Retention & Utilization**

•**Retention systems:** Subsurface storage structures for temporary retention and controlled discharge
•**Cisterns & rainwater tanks:** Use for irrigation, greywater applications, etc.
•**Basin–trench (swale–infiltration) systems:** Near-surface infiltration solutions with integrated filtration function

**Surface Depaving**

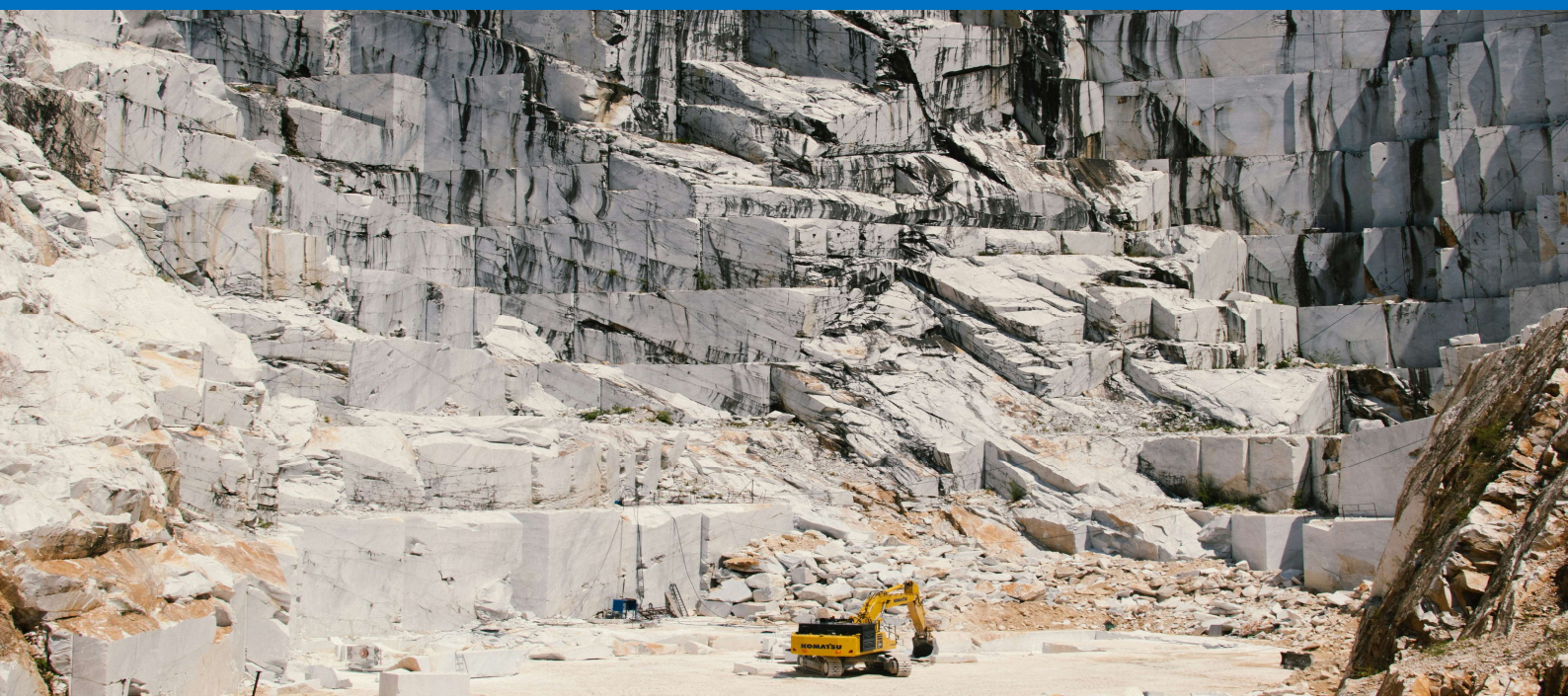
•**Permeable paving surfaces:** e.g., water-bound gravel surfaces, grass pavers, open-pored paving materials
•**Depaved parking areas, sidewalks, and public spaces** with natural water retention capacity

**Green Spaces as Sponge Elements**

•Green islands with integrated storage functions
•Trees with subsurface irrigation systems
•Green roofs and green façades as additional evapotranspiration surfaces

**The sponge city is not a utopia, but a necessary response to the challenges of climate change – in particular increasing heavy rainfall events, heatwaves, and the overload of urban infrastructure.**

# Our Concentrate Systems




**AES Concentrate**

**Hydraulic binder for water-bound surfaces**
**Our AES Concentrate forms the technological basis for high-performance and permeable water-bound surfaces. Combined with locally available aggregates, it enables project-specific formulations for different requirements and load conditions.**

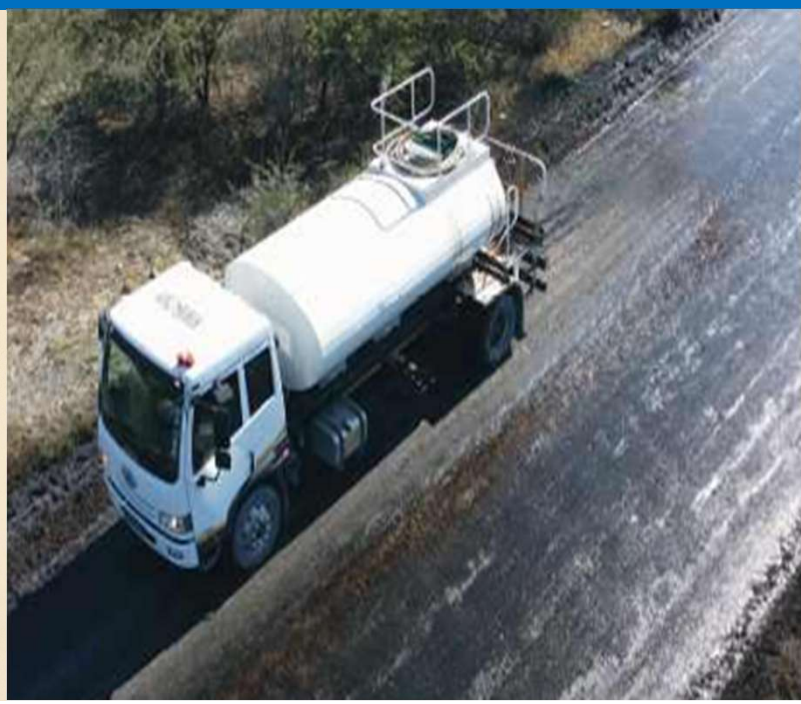
**Permeable · load-bearing · weather-resistant · adaptable to project requirements**

**AES Stabiliser**

**Plant-based binder based on natural raw materials**
**The AES Stabiliser, based on Plantago ovata, stabilises the mineral structure and improves aggregate stability without significantly affecting the open porosity of the surface.**

**Plant-based · permeable · stabilising · natural**

# Our Concentrate Systems



**AES Hybrid**

**Hydraulic + plant-based binder system**
**The combination of AES Concentrate and AES Stabiliser combines the properties of both systems. This creates a particularly high-performance solution for surfaces with increased requirements for stability and load-bearing capacity.**

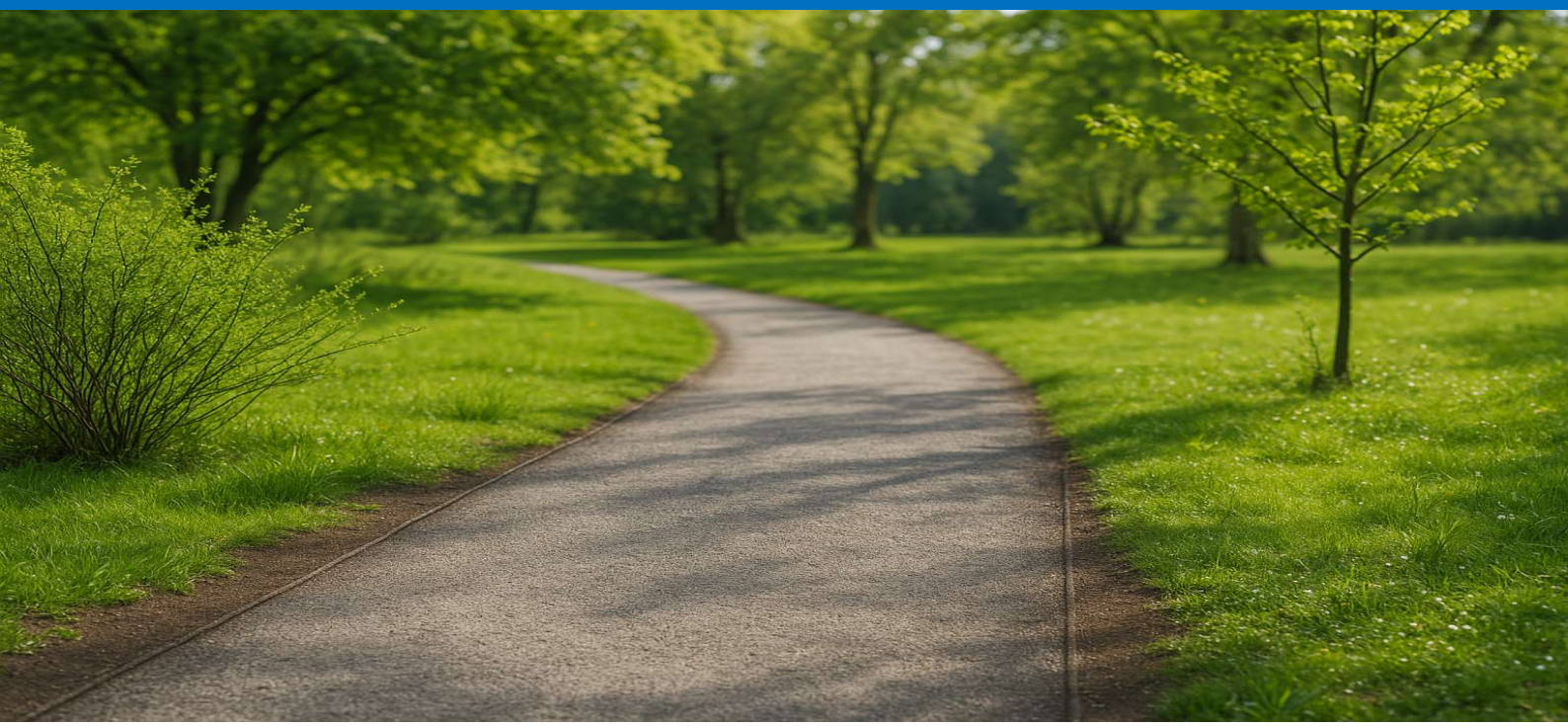
**High stability · permeable · durable · versatile**

**TERRABIND Ultimate + AES Concentrate**

**High-performance system for particularly heavily used surfaces**
**The combination of TERRABIND Ultimate and AES Concentrate was developed for applications with particularly high mechanical load requirements. The formulation can be adapted to the aggregate, use and local conditions.**

**High load-bearing capacity · robust aggregate structure · permeable · dust reduction**

# Depaving & Ecological Surface Design



**Rethinking Depaving – for Climate-Resilient and Livable Surfaces**

Sealed surfaces store heat, prevent rainwater infiltration, and place significant strain on urban infrastructure. Through targeted depaving, surfaces are transformed to absorb water, improve the microclimate, and create new habitats.

We develop solutions ranging from the replacement of sealed surfaces to ecological greening approaches – delivering cooler, more sustainable, and economically efficient areas.

Our water-bound gravel surfaces enable natural infiltration, reduce dust formation, and offer long-lasting, adaptable performance. With AES-Mobil, we also provide a flexible, permeable surface system that can be installed quickly and removed without residue – ideal for temporary or hard-to-access areas.

**Your added value:** improved cooling, reduced runoff, lower costs, and future-proof surfaces.

# Stormwater Management

**Stormwater Management – From Runoff to Resource**

Increasing heavy rainfall events, overloaded drainage systems, and longer dry periods are turning rainwater into a valuable resource. When used effectively, it becomes a key element of climate-resilient surfaces.

We develop solutions for the storage, utilization, and targeted integration of rainwater – from retention systems and cisterns to visible water features in urban environments.

This creates an intelligent water cycle that relieves infrastructure, reduces costs, and actively contributes to climate adaptation.

**Your added value:** lower wastewater fees, reduced flood risk during heavy rainfall, access to funding opportunities, and sustainable rainwater utilization.

# Bio-Soil Conditioner

## TREEBOOST

**Stronger roots for your trees and shrubs**

BAUMBOOST is specifically designed to meet the needs of trees, shrubs, and perennials. It promotes root development and helps trees become more stress-resistant and vigorous.

**Application rates:**
•**Area application:** 250 – 400 g/m²
•**New planting (shrubs and perennials):** 20 – 40 g per liter of substrate
•**New planting (solitary trees from 14/16 cm):** 3 kg per tree
•**Reforestation:** 30 g per plant

## PLANT BOOST

**The perfect solution for your plants**

PLANT BOOST optimizes nutrient supply and the water balance in raised beds, planting containers, flower pots, as well as in vegetable cultivation. It supports high-yield harvests and healthy plant growth.

**Application rates:**
•**For new plantings:** 20 – 40 g per liter of substrate
•**Area application:** 250 – 400 g depending on soil conditions

# CONSAGROS + AES-Solution INTELLIGENT TURF MANAGEMENT

**BioDenit**

Der biologische Bodenaktivator.

*Fokus: Filzreduktion und Reaktivierung des Bodenlebens.*

**BioDenit COCCAL**

Der Booster für Golfgrüns.

*Fokus: Ganzjähriger Gasaustausch und Stickstoffeffizienz.*

**Green Plus (DiatoPOR)**

Der physikalische Wassermanager.

*Fokus: Optimierung der Wasserkapazität und Durchlässigkeit.*

**Ecological. Economical. Efficient.**

**A modern approach to healthy, resilient and resource-efficient turf management.**

**The Consagros system combines biological and physical principles to improve soil activity, make nutrients more efficiently available and optimise water management in the turf root zone.**

**BioDenit**
**Biological Soil Activator**
**Activates natural soil biology, supports the breakdown of turf thatch and promotes the release of plant-available nutrients.**
**→ Healthier soil structure · better rooting · less thatch**

**BioDenit COCCAL**
**Biological Booster for Heavily Used Turf**
**Supports soil fauna and gas exchange in the root zone and is particularly suitable for intensively used turf and golf greens.**
**→ More soil activity · better gas exchange · less Black Layer**

# Jointsand

**Jointing Sand – stable, permeable, and low-maintenance**

AES Jointing Sand 0/2u is a sustainable solution for paving and slab surfaces. It ensures stable joints while remaining flexible and permanently water-permeable.

Thanks to its adaptable structure, the material is highly resistant to loads and surface movements. At the same time, it reduces unwanted vegetation growth, improves infiltration performance, and minimizes maintenance requirements.

Manufactured from natural raw materials, this jointing sand provides an environmentally friendly and long-lasting solution for modern surface paving systems.

**Your added value:** stable and flexible joints, reduced maintenance effort, improved infiltration, and sustainable materials.

# Jointsand

**Jointing Sand 0/2g – durable, load-bearing, and virtually weed-free**

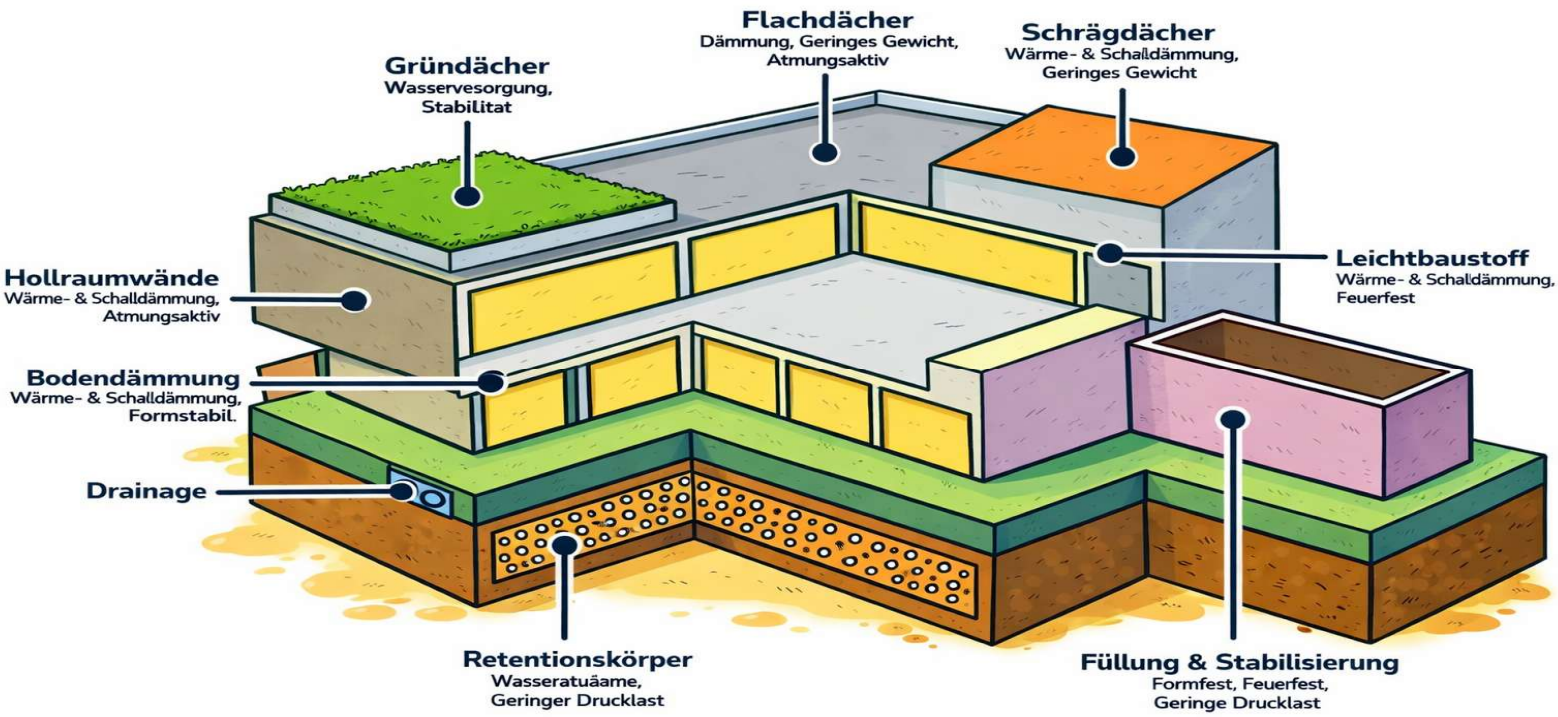
AS Jointing Sand 0/2g provides a sustainable solution for heavily used paved surfaces – without the need for chemical weed control agents. Through thermal activation, a firm, closed joint structure is created that significantly reduces unwanted vegetation growth.

At the same time, the joint remains slightly flexible, highly load-bearing, and resistant to intensive use as well as mechanical cleaning. It is ideally suited for high-traffic areas such as pedestrian zones and public squares.

Manufactured from environmentally compatible materials and resistant to de-icing salts, the system delivers long-term performance and minimal maintenance requirements.

**Your added value:** permanently stable joints, significantly reduced weed growth, lower maintenance costs, and optimal suitability for high-load surfaces.

# Expanded Clay




**Expanded Clay – lightweight, high-performance, and sustainable**

Our expanded clay is made from natural clay and expanded through a thermal process into lightweight, shape-stable, and load-resistant granules – completely free of chemical additives.

Thanks to its high water storage and release capacity, it is ideally suited for water management, substrate constructions, and lightweight building applications. At the same time, it offers low weight, high durability, and easy handling.

Available in round or crushed form, expanded clay provides flexible application options for a wide range of projects.

**Your added value:** efficient water storage, low weight, sustainable materials, and versatile applications.

# CITIFYER

## CITIFYER – MAPPING APP

**Digital Depaving Planning in Seconds**
Draw, evaluate, calculate – all in one tool
Automatic cost and material calculation
Ideal for municipalities, cities, and climate protection teams

**What Citifyer can do and what it enables you to achieve**

Citifyer turns every map view into an interactive planning environment.
You can precisely draw surfaces directly into the map – from streets and parking areas to entire development sites – and immediately receive an automated analysis of the depaving potential.

Citifyer provides suitable measures, materials, cost calculations, as well as ecological impact indicators such as retention volume or heat reduction effects.

In addition, the platform generates clear and structured reports that document planning steps and results in a transparent way.

This enables you to plan and implement depaving projects faster, more reliably, and with significantly higher efficiency.

# Greening (Roof, Façade, Surroundings)

**Greening – natural cooling for livable spaces**

Green roofs, façades, and open spaces significantly improve the urban climate, reduce temperatures, and create valuable habitats. They act as natural cooling systems, filter pollutants, and sustainably enhance the quality of stay in urban environments.

We develop tailored greening solutions – from roof and façade greening to targeted planting concepts with suitable substrates.

This creates climate-adapted spaces that combine ecological performance with strong design quality.

**Your added value:** natural cooling, improved air quality, increased biodiversity, and attractive funding opportunities.

# Timber Frame Construction & Ecological Building

**Ecological Building – sustainable, efficient, and future-proof**

The choice of construction method and materials determines the carbon footprint, energy consumption, and overall living quality. Ecological building focuses on renewable resources, intelligent water use, and integrated concepts for sustainable buildings.

We develop solutions ranging from timber frame construction and natural insulation materials to water-sensitive planning and integrated greening systems.

This results in buildings that conserve resources, reduce environmental impact, and at the same time provide a high level of comfort.

**Your added value:** lower $CO_2$ emissions, improved indoor climate, sustainable water retention, and attractive funding opportunities.

# Collaboration & Process

**From First Consultation to Implementation – Step by Step Towards Climate-Adapted Solutions**

The development and implementation of blue-green infrastructure requires a structured and collaborative approach. Each measure must be tailored to local conditions, budget frameworks, and stakeholder objectives. A clear process is therefore essential.

**1. Initial consultation & needs assessment**
In a personal or digital meeting, we jointly define challenges, requirements, and framework conditions. This includes specific sites as well as strategic goals, existing planning frameworks, and technical constraints.

**2. Site inspection (if required)**
On-site assessments provide a deeper understanding of spatial conditions such as gradients, soil characteristics, existing infrastructure, and usage conflicts. This enables the development of realistic, site-specific solutions.

**3. Measure proposals & concept development**
Based on the findings, initial recommendations are developed – including technical measures, planning concepts, and design approaches. The focus is consistently on climate resilience, feasibility, and eligibility for funding, while balancing functional, ecological, and design aspects.

**4. Recommendations for products, partners & funding**
Through our network, we provide targeted recommendations for suitable products (e.g., substrates, retention systems), project partners (e.g., planning offices, contractors), and potential funding programmes at municipal, regional, or national level.

**5. Implementation support & tender assistance (optional)**
Upon request, we provide advisory support throughout the implementation phase – including tendering processes, detailed planning, coordination with authorities, and on-site execution. This ensures that the original objectives are successfully translated into practice.

# Collaboration & Process

**Sustainability is more than a trend – it is our responsibility.**
That is why we focus on:

**Experience from Planning to Implementation**
We support projects holistically – from the initial idea and technical development through to on-site execution. With many years of practical experience, we understand the requirements of municipalities, businesses, and private developers from first-hand perspective.

**Technical Expertise & Independent Consulting**
Our interdisciplinary team combines technical expertise with a strong understanding of economic factors. We work product-neutral and manufacturer-independent – ensuring that we identify the solution that truly fits the specific requirements.

**International Perspective & Local Solutions**
Our experience from projects in Germany, Eastern Europe, and Central Asia shows that every region requires its own tailored approach. We think globally, plan regionally – and rely on adapted, future-proof concepts.

AES-Solution

A-ES GROUP CONSTRUCTION

**AES-Solution**
Kolbeweg 10
30655 Hannover
Deutschland

www.aes-solution.com
info@aes-solution.com
+49 1511 5701783
+371 2916 9892

**A-ES Group SIA**
Jūrmalas gatve 132A-2,
LV-1029 Riga
www.a-es.lv