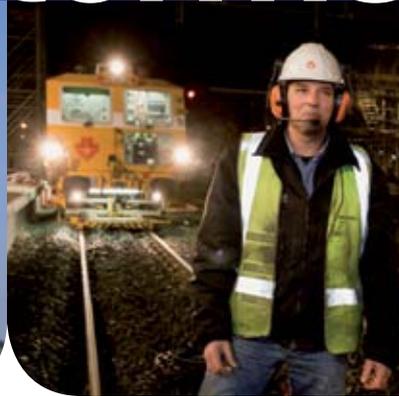


Thinking in  
**terms of lifespan**



**Strukton**

# Applying **lifespan thinking** to projects



## Concrete to Concrete Aggregates (C2CA)

### **Construction and management for DUO (the Education Executive Agency) and the Regional Tax Office in Groningen**

Strukton company Afvalbank Nederland has taken the initiative for the C2CA project together with partners in the supply chain and knowledge institutions. The aim of this project is to investigate whether concrete can be fully reused. This involves using innovative techniques (Advanced Dry Recovery). Initial trials have taken place on demolition rubble using Advanced Dry Recovery separation. After processing, the concrete from the demolished office blocks of the Education Executive Agency and the Regional Tax Office was used in the building's new car park. So, Strukton closes the chain. We bring our experiences to the Green Deal concrete innovation network, where together with partners in the supply chain and the authorities we work towards sustainable concrete.

(thinking in terms of lifespan in the disposal phase)

## Sustainable air conditioning without excessive noise

### **Construction of Ziggo Dome concert arena**

In the spring of 2012, Strukton delivered the Ziggo Dome concert arena in south-east Amsterdam. The arena has space for 17,000 visitors. A fellow contractor, Warmtebouw Utrecht, installed a thermal storage system in the premises. This sustainable technology uses the energy present in the soil and groundwater. The Ziggo Dome uses 100% sustainable energy.

(thinking in terms of lifespan in the operational phase)

## Sustainable logistics

### **Construction of car park in Harderwijk**

The car park was built right in the centre of the town. In order to prevent trucks from constantly having to drive through the streets, underground transport was chosen. The soil was removed via a high-pressure tube laid in the sewer. This minimised the nuisance to local residents.

(thinking in terms of lifespan in the realisation phase)

# Strukton's vision

## Thinking in terms of lifespans, for projects, people and nature

Our actions are guided by the motto 'Strukton thinks in terms of lifespans - for projects, people and nature'. We are convinced that this is necessary for the continuity of our company, so that we can continue to solve the problems of our clients competitively and innovatively.

Strukton offers complete concepts for infrastructure and accommodation. The emphasis is on mobility, transport hubs and uninterrupted operation. The key element in our work is thinking in terms of lifespan. This means that we take account of the lifespan of the object when we design it: the realisation phase, the operational phase and the disposal phase.

### **Sustainable Work**

Many of our projects contribute directly to sustainability and therefore have social benefits. The construction of rail infrastructure, new energy-saving technical systems, energy-efficient buildings and sustainable energy facilities immediately yield a reduction in the environmental burden.

When realising the projects, we work continuously on improving safety, reducing the environmental burden and integration into the surroundings. Smart designs let us limit the use of both raw and auxiliary materials and energy in the realisation phase, operational phase and disposal phase. We also limit the amount of waste and emissions, not only during the realisation but also during demolition work. We prefer to use raw materials and auxiliary materials which can be recycled, without making any quality concessions for this.

### **It's people who do the work**

Strukton believes that its employees are the key to success. We invest a great deal in the safety of our employees and in training and education. Strukton is a preferred employer and offers good training and development opportunities, including the Strukton Young Management training programme. Businesses are playing an ever more important role in involving people whose position in the labour market is disadvantaged. Together with our clients and stakeholders, we aim to do something about this in orders where this is a factor. Our part is to train the people within the context of the project to ensure they can progress to regular employment ('social return').

‘As a private company, we are fully aware that we have a responsibility for reducing environmental burdens, for energy savings and for reducing emissions of harmful substances like CO<sub>2</sub>.’

- Ambitions**
- CO<sub>2</sub> emissions to be reduced by 15% by 2020 (indexed for our production figures)
  - 100% of electricity to come from green sources
  - 75% of construction projects lasting longer than 3 months to have a waste management system
  - 50% of clean concrete waste generated to be reused in new concrete
  - 50% of building and demolition waste to be reused
  - Strukton is FSC and PEFC certified
  - Continuation of certification at level 5 on the CO<sub>2</sub> performance ladder

#### **Sustainability demands reductions in CO<sub>2</sub> emissions and waste**

As a private company, we have a responsibility for reducing environmental burdens, for energy savings and for reducing emissions of substances like CO<sub>2</sub> and other harmful compounds. That is why we are making an effort to reduce CO<sub>2</sub> emissions further. Our CO<sub>2</sub> reduction target is to have cut CO<sub>2</sub> emissions by 15% by 2020 (indexed for our production figures). We are working with our partners in the supply chain and taking action in the area of energy savings and mobility. Our lifecycle approach also lets us focus on waste reduction. Any waste material can in principle become a raw material that can be used elsewhere. Our goal is for 50% of clean concrete waste to be reused in concrete and for 50% of our building and demolition waste to be reused as well after separation. This will be stepped up in the next few years. Our business unit Afvalbank Nederland is responsible for this.

#### **The future**

For the sake of transparency, we communicate our CSR policy actively, both internally and externally. From 2013, we will include feedback about the CSR policy results in an integrated annual report that meets the GRI (Global Reporting Initiative) guidelines. We are currently preparing the organisation for GRI reporting.

CSR steering group,  
Marinus Schimmel, Diederik Schonebaum, Martijn Smitt and Gert Jan Vos

# Thinking in terms of lifespan leads to product innovation...



## Silent mastic

### Reduced noise burden of roads

Silent mastic is an asphalt product highly suited to use in urban areas and on ringroads. Besides simply reducing noise, silent mastic forms a thicker layer than regular noise-reducing surfaces. The advantage of this is a longer lifespan. As this type of asphalt can also be laid in worse weather conditions than a regular noise-reducing surface, it can also be used during most of the year.

## Re-use of braking energy

### Suitable for trains, trams and metro

Strukton has developed a concept that collects and reuses kinetic energy in vehicles (trains, trams, metro). Braking energy is stored in the battery of the vehicle. The energy stored can be used when the vehicle drives off, reducing peak load, to travel for short distances without an overhead wire (up to 8 kilometres) and to power on-board networks. Other uses, such as feeding braking energy back into the overhead wire or lighting stations, always involve a loss of energy. By storing the kinetic energy in the vehicle itself, no energy is lost.

## Green concrete

### An innovation for making prefab concrete sustainable

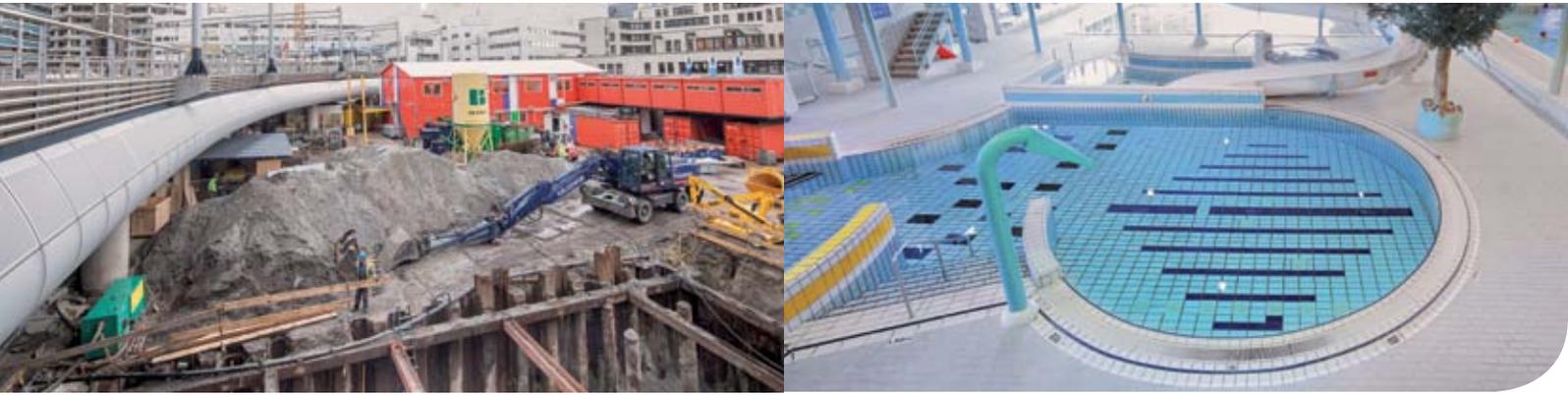
Strukton has taken the initiative to reuse old rail ballast in concrete. This process takes place in our own prefab factory. The rail ballast is first broken up then cleaned. It is then used in various concrete products.

## Sustainable Energy

### Use of tidal, wave and wind energy

Strukton views the growing interest in sustainable energy as undeniable and inescapable. The business unit Strukton Sustainable Energy concentrates on the design, development and maintenance of offshore and onshore sustainable energy sources. For instance Strukton Sustainable Energy recovers energy from water. Together with Dutch turbine manufacturer Tocardo, Strukton Sustainable Energy forms the company Tidal Power Projects, specialising in the exploitation of wave and tidal energy worldwide. The service ranges from supplying turbines to engineering, building foundations and installation.

## ...and process innovation



### CO<sub>2</sub> reduction for logistics in construction

#### **Construction of new public transport terminal Den Haag Centraal station in The Hague**

Strukton is working with TNO and Connekt's 'Sustainable logistics' programme on a variety of initiatives to reduce CO<sub>2</sub> emissions for construction logistics.

In rebuilding Den Haag Centraal station, Strukton is investigating with its suppliers how they could coordinate planning and storage more closely. Materials are stored at a special logistics centre on the outskirts of the city. This solution was chosen based on advice from TNO, which carried out an investigation to find the most sustainable logistics solution on behalf of Strukton.

### Making buildings sustainable

#### **Work on the Rotterdam municipal swimming-baths through an Energy Service Company (ESCO)**

An Energy Service Company (ESCO) is an innovative formula for making buildings sustainable. The formula provides guaranteed lower energy costs, optimal maintenance and increased comfort. Strukton applies this formula in the maintenance and energy performance contract for the municipal swimming-baths in Rotterdam. Under the contract, a guaranteed saving of 34% for energy costs and 15% for maintenance costs is agreed. This saves the municipal authority millions of euros in maintenance costs.

# Some words from those on the ground

HANS KORBEE FROM AGENTSCHAP NL Source: Real Estate 31 July 2011

‘Using ESCO’s can make a significant contribution to improving the energy performance of existing utility buildings.’

JEROEN MIERIS FROM STRUKTON Source: Real Estate 31 July 2011

‘The ESCO formula represents a significant long-term solution for making the Dutch property portfolio sustainable.’

BAS H ALIN , OPERATIONS AND SUPPORT MANAGER FOR JCD ECAUX Source: Initially March 2012

‘What’s great is that they (Strukton, Ed.) think along the same lines as us, for instance for making our business operations sustainable.’

HARRY HOFMAN , PROJECT LEADER CSR STRUKTON

‘I believe that CSR is based on two fundamental aspects: helping the client achieve sustainability and investing in both sustainability and looking after our people.’

MARTIJN SMITT , DIRECTOR STRUKTON CIVIEL

‘Living and working in a socially responsible way has to be in your heart, not just your head.’

MARINUS SCHIMMEL, CHAIRMAN STRUKTON WORKSPHERE

‘Maintenance contracts in which we are also responsible for energy costs will motivate us to invest in energy-saving features.’

[www.strukton.com/csr](http://www.strukton.com/csr)



**Strukton**

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