



A dam-reservoir with a capacity of 25 million m³. © PSW MI (DBR)

The maximum level of the water body rises to 361 m above sea level. © Caroline Marchal

SUPPLY AND REGULATION

The Vesdre Dam can distribute 82,500 m³ of treated water on a daily basis. Starting from intakes established on the Eupen – Grâce-Hollogne water conveyance, it supplies:

- all the local populations in the Pays de Herve and the Liège agglomeration (except for Liège city);
- University of Liège campus (Sart Tilman);
- the industrial zones in the Pays de Herve;
- the Spa entity and the high points of the Verviers agglomeration.

Furthermore, the structure regulates the flow of the Vesdre, either by increasing the low-flow, or by reducing the maximum flood flow.

The Vesdre Dam is a gravity dam, i.e. its mass alone is sufficient to balance the surge of the water retained. The volume of the dam's wall is 450,000 m³, and the lake's capacity is 25 million m³.

The supply of this reservoir is mainly from the Vesdre and the Getzbach, its tributary, and is supplemented by a catchment on the Helle.

WATER COLLECTION AND DRAINAGE

The two water intakes are located at elevation 324, symmetrically to the dam's axis, which they are 27 m away from. Comprising two 900 mm diameter pipes, these intakes have guard butterfly valves that are 1,100 mm in diameter. Installed in accessible galleries, they bring the water to the treatment station via a tunnel under the spillway.

The two drains are located on the same vertical axis as the corresponding intakes, but at elevation 308. These drains are built from pipes that are 1,500 mm in diameter. Also installed in accessible galleries, they can drain a total flow of 70 m³/s. Each one is equipped with a guard butterfly valve that is 1,800 mm in diameter, and an adjustment butterfly valve that is 1,500 in diameter, and extends along a leak channel at the foot of the dam.

TECHNICAL DATASHEET

Location

On the Vesdre, at Eupen

Works

Construction: 1936- 1949

Inauguration: 9 February 1950

Technical, administrative and electromechanical management

Public Service of Wallonia (SPW) Mobility and Infrastructures • Liège Waterways and Dam-Reservoirs Directorate • Dam-Reservoirs Directorate (DBR)

Management of the production and distribution of water and electricity

Walloon Water Company (SWDE)

www.swde.be

Tourist operation of the site

For bookings and information concerning the water treatment station, the dam wall and the trails for walkers and cyclists, please contact the Eupen Tourist Office: Tourist Info Eupen, Rathausplatz 14, 4700 Eupen.

Phone no.: + 32 (0) 87 55 34 50 or www.eupenlives.be

Climbing Tower. Info on request to info@worriken.be

Information and technical documentation

Dam-Reservoirs Directorate

Avenue Peltzer 74, 4800 Verviers

Phone no.: + 32 (0) 87 21 39 11

<https://spw.wallonie.be> « Structure et Services »

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VESDRE

DAM



RETAINING STRUCTURES

The topographical layout of Wallonia explains the location of structures on the high Walloon plateaus that form the roof of Benelux.

These retaining structures have been developed to meet several of the State's basic needs: mainly, to produce drinking water and water for electricity, as well as to bolster low water levels for river navigation and stave off rising water levels.

Other objectives have been assigned to the structures, from their design, or later on, meeting many social challenges relating to water resources. And these uses are continuing to evolve. Our society is consuming more water and paying greater attention to nature conservation and the development of water leisure activities... Furthermore, the effects of climate change are accentuating the essential role of these retaining structures in water management even more.

The dam under construction in 1947 © PSW Archives

A DAM ON THE VESDRE

In 1878, the construction of the Gilleppe Dam was completed. But facing increased consumption, and to meet the needs of both the population and industry, successive governments decided to plan other dams. The Vesdre Dam would be the first achievement of this vast programme. Its main aim was to give new impetus to Eupen industry and make up for the lack of water available for this city, both in terms of quality and quantity.

Inauguration of the structure, 9 February 1950 © PSW Archives

In 1935, a decision was taken to build a 25 million m³ dam-reservoir. This capacity required the structure to be established downstream of the confluence of the Vesdre and the Getzbach, its tributary. Construction began in 1936 and was completed in 1949. The dam was inaugurated on 9 February 1950 by the Belgian Minister of Public Works, Auguste Buisseret.

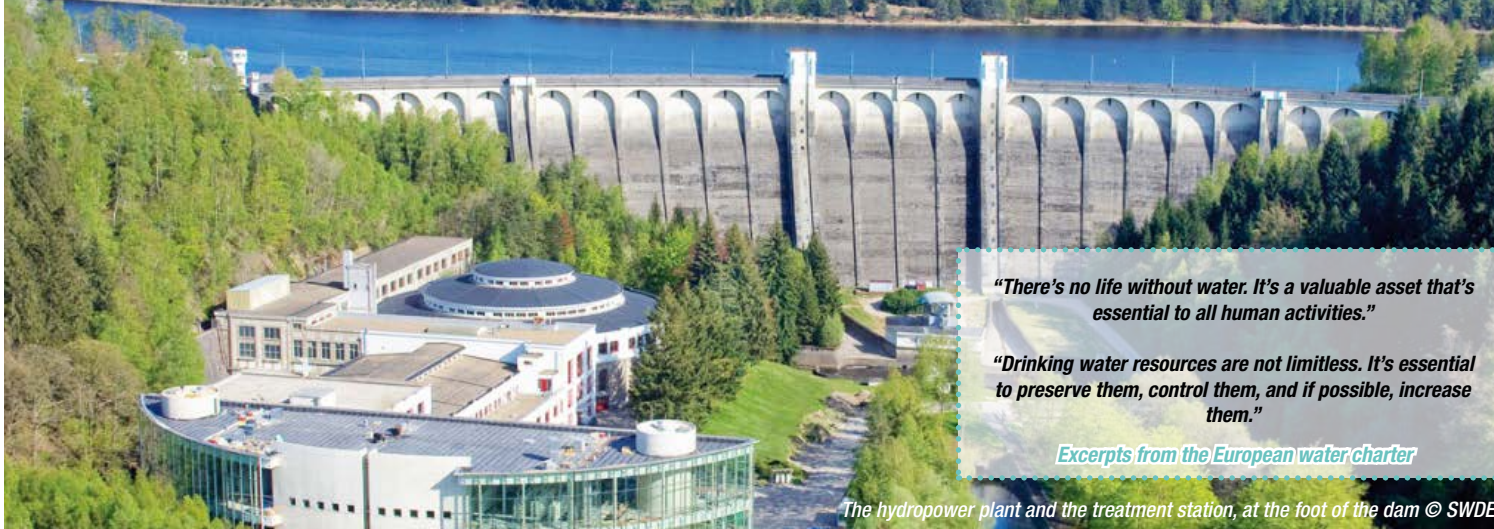
View of the dam on 29 June 1951 © PSW Archives





Water pipes © PSW MI (DBR)

Accessible gallery © PSW MI (DBR)



“There’s no life without water. It’s a valuable asset that’s essential to all human activities.”

“Drinking water resources are not limitless. It’s essential to preserve them, control them, and if possible, increase them.”

Excerpts from the European water charter

The hydropower plant and the treatment station, at the foot of the dam © SWDE

THE HYDROPOWER PLANT

Located at the foot of the dam, the hydropower plant has two 828 kVA generators and a 332 kVA generator which, with the treatment station’s recovery generator (550 kVA), produce between 3 and 6 million kVA a year. This energy is used for the consumption of the purification station and its outdoor equipment (reservoir and conveyance), as well as to power the dam’s installations.



View from the wall of the dam downstream © SWDE

THE TREATMENT STATION

The dam’s purification station offers a maximum treatment capacity of 55,000 m³ of water a day. It comprises:

- a hydropower plant, located at the foot of the dam;
- a covered, cylindrical settling tank of 57 m in diameter, divided into 12 compartments;
- 23 sand filters and 5 calcite filters;
- 5 nanofiltration lines;
- a reservoir with a capacity of 50,000 m³.



CONTROLLING THE DAM

The maximum lake level tolerated has been set at altimetric elevation 360.8 while the crest of the dam wall is at elevation 362.

In fact, the lake’s level varies according to the time of year. It is necessary to reconcile the supply of a minimum flow to the treatment station with the safe containment of likely floods. To prepare for any eventuality, a spillway with two outlets and descending roller gates enables drainage at 230 m³/s.

The dam is the subject of precise and constant control measures. To guarantee the structure’s stability, it’s of crucial importance to be able to identify a potential infiltration and measure the sub-pressure. Drains run through the dam’s mass and are even buried under the foundation and the riverbed. They avoid the formation of water under pressure under the dam. Furthermore, seven vertical pendulums instantly identify even the most infinitesimal movements of the dam and its foundation.



A site under constant control. The spillway, which drains 230 m³/s. © PSW MI (DBR)



CHARACTERISTICS OF THE STRUCTURE

THE DAM	
Type	Concrete weight
Height with foundation	66 m
Length at crest	410 m
Volume of the wall	450,000 m ³ of concrete
Peak of the dam	362 m above sea level
Lake surface area	126 ha
Lake capacity	25,000,000 m ³
Maximum level of the water body	361 m
River level	304 m
‘Lake’ catchment basin	6,920 ha
‘Helle’ catchment basin	+ 3,675 ha

THE HELLE CATCHMENT TUNNEL	
Construction	1949
Length	1,200 m
Diameter	2.30 m
Maximum flow	25 m ³ /s

THE EUPEN- GRÂCE-HOLLOGNE WATER	
Length	+/- 60 km, including a siphon under the Meuse
Pipe diameters	700 mm to 1,100 mm

CONNECTED EQUIPMENT

- An Upper Vesdre outlet
- A hydropower plant
- A nanofiltration plant
- Sludge settling tanks
- An administrative reception building and a dam manager’s house
- Various tourist facilities (panoramic tower, restaurant, snackshop, shops, playground)
- A vast car park for visitors



THE TOURIST FACILITIES

The Vesdre Dam is a very popular destination for an outing. It offers many leisure activities and attracts many cyclists and walkers, with tours shown at the map points.

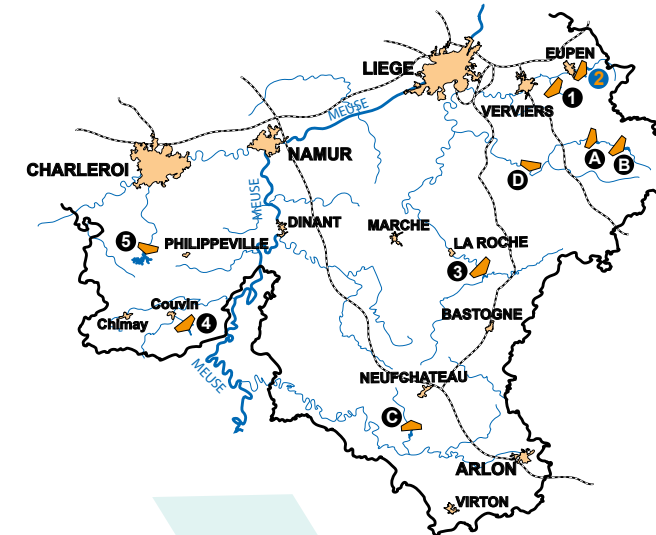
Perched on a rise overlooking the lake banks, the restaurant and reception centre offer a splendid view over the whole site and the surrounding forest of Hertogenwald from their large terraces.

Educational trails are offered to visitors. The ‘Foxy’ forest educational trail (2.5 km) enables the youngest visitors to develop their knowledge of local fauna and flora in a fun way. And the water educational trail (1 km), which starts below the restaurant, offers nine information panels tracing back the history of the dam’s construction and explaining the course of the water and the treatment station’s operation.

Climbing enthusiasts can also try to climb the old panoramic ‘Climbing Tower’.

Finally, there’s a large playground for the youngest visitors.

DAMS IN WALLONIA



- 1 Gileppe Dam
- 2 Vesdre Dam
- 3 Ourthe Dam
- 4 Ry de Rome Dam
- 5 Eau d’Heure Dam

- A The Warche Dam in Robertville
- B The Warche Dam in Bütgenbach
- C The La Vierre Dam
- D The Amblève Dam in Coö