

## THE TOURIST FACILITIES

### The Ourthe Dam

Nestling in the heart of the Ourthe valley, Lake Nisramont offers nature lovers a unique natural setting. The dam is the starting point for a 14km circuit around the lake, recommended for experienced walkers. This fairly strenuous route enables walkers to enjoy a unique moment in unspoilt countryside, with splendid views over the Ourthe valley.

Located at the confluence of the Western and Eastern Ourthe rivers, the monumental structure 'Avolare' offers a

breathtaking view of the surrounding countryside. On the other side of the confluence, a major ADEPS sports centre offers a wide range of activities. Water sports such as stand-up paddle boarding and kayaking are also available on the lake during the summer months.



The area around the lake, perfect for walks  
© SPW MI (DBR) – Caroline Marchal



The confluence of the Two Ourthes and the Avolare  
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For families, there is a 1.5km walking trail, also starting from the dam, where children can discover the incomparable atmosphere of the Ardennes forest. Please note that this route is not accessible to pushchairs.

Part of the route around the lake is covered by the Escapardenne Eisleck Trail, a route linking La Roche-en-Ardenne to Kautenbach (Grand Duchy), passing through the exceptional sites of the Hérou rock, listed as an outstanding Walloon heritage site, and Cheslé, an ancient Celtic fortress.

Situated at the foot of the dam, the tavern has a large terrace on the banks of the Ourthe, where you can enjoy the enchanting surroundings.

## TECHNICAL DATASHEET

### Location

On the Ourthe, in Nisramont

### Works

Construction: 1953-1958

Inauguration: 14 September 1959

### Technical, administrative and electromechanical management

SPW Mobility and Infrastructures

- Liège Waterways and Dam-Reservoirs Directorate
- Dam-Reservoirs Directorate

### Water production and distribution

Société wallonne des eaux (SWDE)

[www.swde.be](http://www.swde.be)

### Tourist operation of the site

Houffalize – La Roche-en-Ardenne Local Development Agency

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### Technical information and documentation

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<https://spw.wallonie.be> 'Structure and Services'

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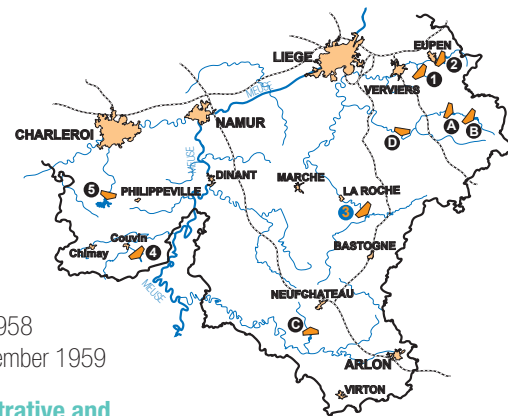
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- |                       |                                |
|-----------------------|--------------------------------|
| 1 The Gieppe Dam      | A The Warche Dam in Roberville |
| 2 The Vesdre Dam      | B The Warche Dam in Bülgenbach |
| 3 The Ourthe dam      | C The Vierre Dam               |
| 4 The Ry de Rome Dam  | D The Ambliève Dam in Coo      |
| 5 The Eau d'Heure Dam |                                |

## THE

# OURTHE

## DAM



The dam looking downstream, with its three spillways © SPW MI (DBR) – Caroline Marchal

## THE IMPORTANCE OF THE 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 great 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.

Upstream of the small town of La Roche in the Ardennes, the Ourthe valley, with its geological and topographical qualities on the one hand, and its small population on the other, is a particularly favourable site for the establishment of a large reservoir.





Spillway (interior view)  
© SPW MI (DBR)

Underground tunnel  
© SPW MI (DBR) – Vincent Lognay

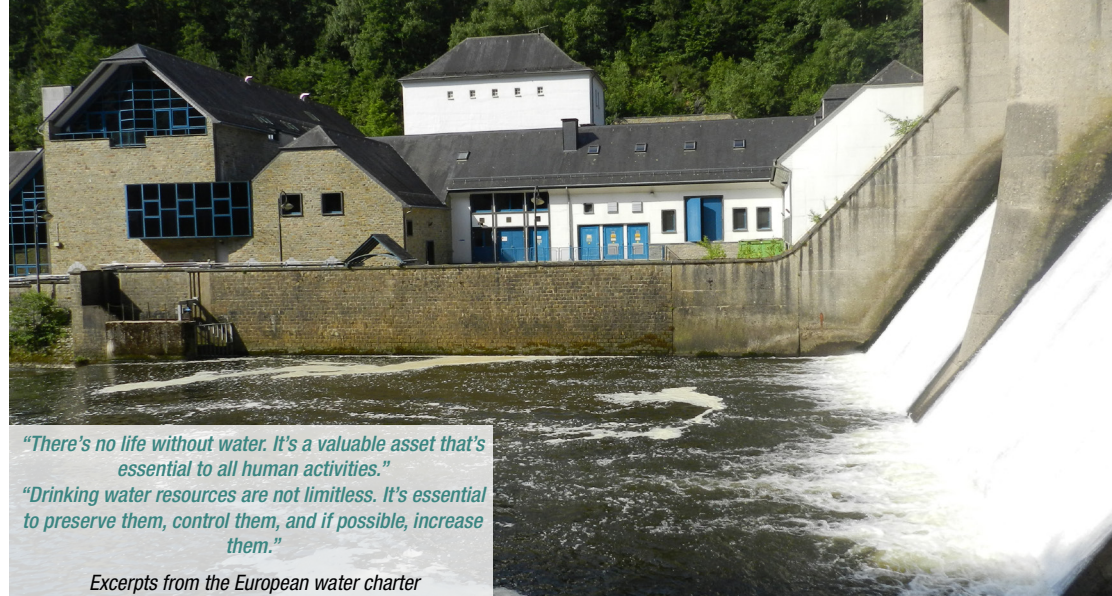
## HISTORY OF THE DAM

Initial studies envisaged the construction of a large dam (250 million m<sup>3</sup>) on the Ourthe river, just downstream of the current site, and a tunnel link with another dam, built in the Aisne valley (757 million m<sup>3</sup>). This complex was designed to supply water for food and industry, and to maintain the low water level of the Meuse. The large Ourthe dam alone could have supplied 600,000 m<sup>3</sup> of water a day.

However, this project did not meet with the unanimous approval of the interested parties. Initially, the current small dam was built on the Ourthe river, and could later be used as a cofferdam during construction of the large dam. However, once the major additional equipment had been installed, it was no longer economically feasible to drown this dam while building the large one, so the initial dam became permanent.

Designed as a concrete gravity dam, the contract was awarded in 1953 and it was completed in 1958. It is located approximately 500 metres upstream of the Fay bridge at Nisramont, on the Nadrin–Ortho road.

The dam consists of two non-overtopping walls, with a crest width of 4m and a causeway elevation of 176m. The central part of the structure consists of a spillway wall with a fixed sill at elevation 272, the maximum water level (275m) being obtained by closing 3m-high roller gates. These gates, of which there are 3, are suspended by a cable system, the fixed pulleys of which are supported by 4 abutment piers each 2.6m wide. The total length of the structure is therefore 116m.



*"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 WATER TREATMENT PLANT

The main purpose of the dam is to supply the municipalities of the Arlon plateau, Marche, the north of the province of Luxembourg and the Bastogne plateau as far as Martelange with high-quality drinking water. As the water in the reservoir did not have the stringent characteristics required by law, it was necessary to build a treatment plant capable of producing 6,000 m<sup>3</sup>/day initially in 1966, rising to 12,000 m<sup>3</sup>/day in 1974. As the need for and demand for drinking water continued to grow, it was decided in 1988 to extend the plant, doubling its production capacity to 24,000 m<sup>3</sup>/day.

The plant's laboratory monitors the treatment and quality of the water at all stages on a daily basis.

## THE SLUDGE TREATMENT PLANT

Following a Royal Decree on the protection of surface water, a waste treatment building was built in 1985.

The sludge from the decanters is periodically drained into a sludge pit. It is thickened and sent to a filter press. The sludge comes out in the form of inert cakes transported to an approved landfill site.

To avoid discharging chemicals into the river, washing water from the filters, effluent from the sludge station and cleaning water from the storage tanks for the various reagents is recycled at the top of the decanters.



## THE HYDROPOWER PLANT

Leaning against the foot of the dam wall on the right bank, the hydropower plant produces the energy needed to run the site. Among other things, it powers the motor-driven pumps that pump the treated water through two 400-millimetre-diameter pipes to the reservoirs at Ortho.

The hydropower plant was built in 1955. Its total apparent power is 1,320 kVA. It is equipped with two double-axis horizontal turbines, with a maximum flow rate of 8 m<sup>3</sup>/sec.



The boathouse, used to monitor the lake  
© SPW MI (DBR) – Caroline Marchal



Pre-barrage on the Eastern Ourthe  
© SPW MI (DBR) – Vincent Lognay



## TECHNICAL CHARACTERISTICS

### THE DAM

Type of dam	Concrete gravity dam
Height of wall	21 m above foundations
Length of the wall	116 m at the crest
Volume of the wall	22,000 m <sup>3</sup>
Area of the lake	47 ha
Capacity of the lake	3,000,000 m <sup>3</sup>
Maximum level of the lake	275 m
Level of the river	261.2 m
Catchment basin	74,000 ha – 740 km <sup>2</sup>
Spillway	Three spillways with roller gates

### SUPPLY TO THE ORTHO RESERVOIRS

Backflow pumps	2 for 500 m <sup>3</sup> /h and 2 for 300 m <sup>3</sup> /h
Elevation	around 200 m
Length	Two twinned pipes approx 7 km long
Pipe diameter	400 mm
Reservoir capacity	2 for 3,000 m <sup>3</sup> and 2 for 12,000 m <sup>3</sup>

### EQUIPMENT

- › A hydropower plant
- › A water treatment plant
- › A sludge treatment plant
- › A technical information building and cafeteria
- › A large car park with rest areas and barbecue facilities
- › A complex of 12 houses for the staff
- › A shed for lake surveillance boats
- › Two pre-barrages equipped with fish ladders



Pre-barrage on the Western Ourthe © SPW MI (DBR) – Vincent Lognay