

# Selected fish pass projects in the Meuse catchment



Ingenieurbüro Floecksmühle  
wasser umwelt energie

Ein Unternehmen der **FICHTNER** Water & Transportation GmbH

# 1. old fish passes: 1.1 geometric problems

---

- pools are to small
- Water depth to small
- energy to high
- vents to small



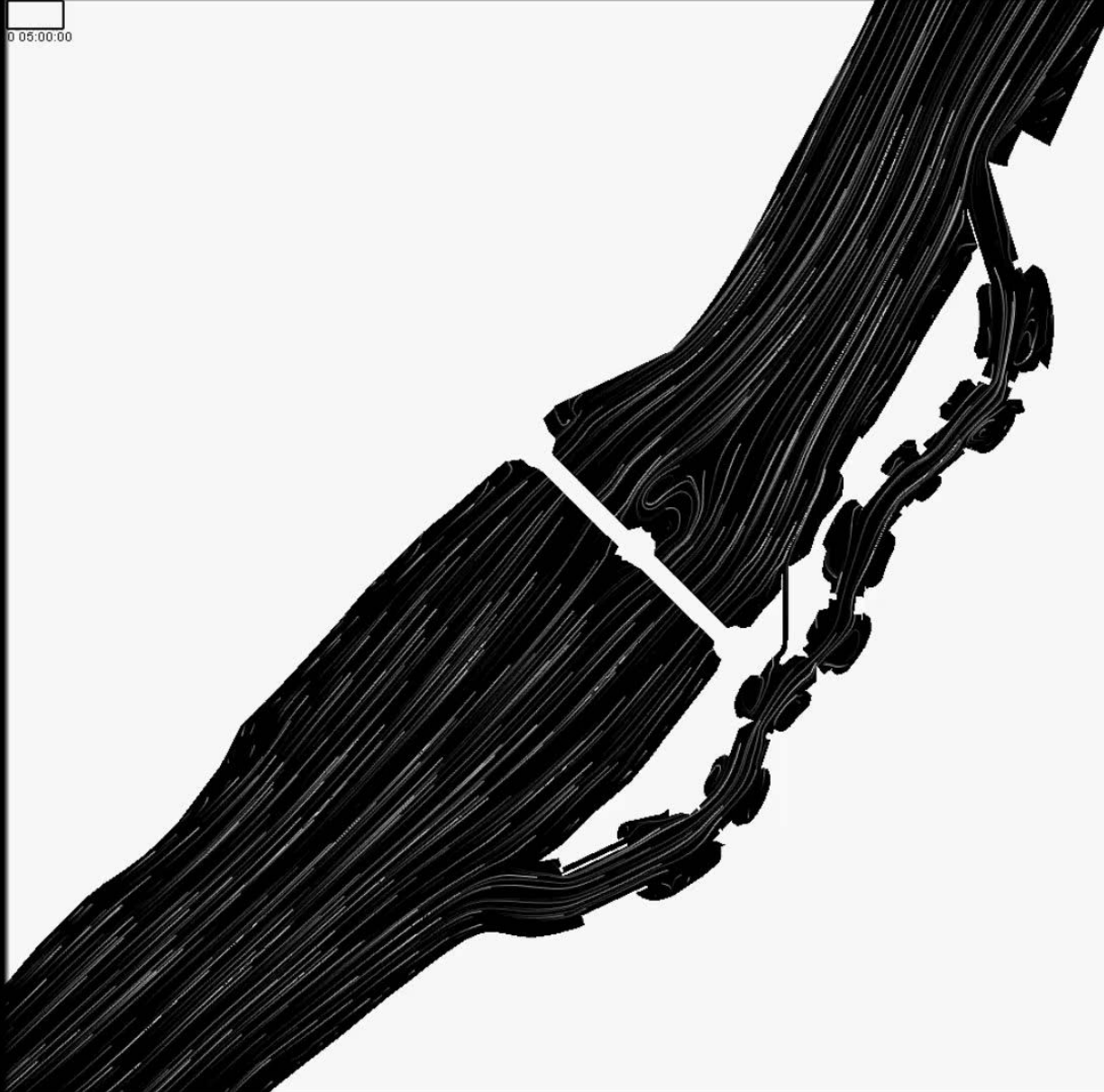
picture by Ingenieurbüro Floecksmühle GmbH

# 1. old fish passes: 1.2 hydraulic problems

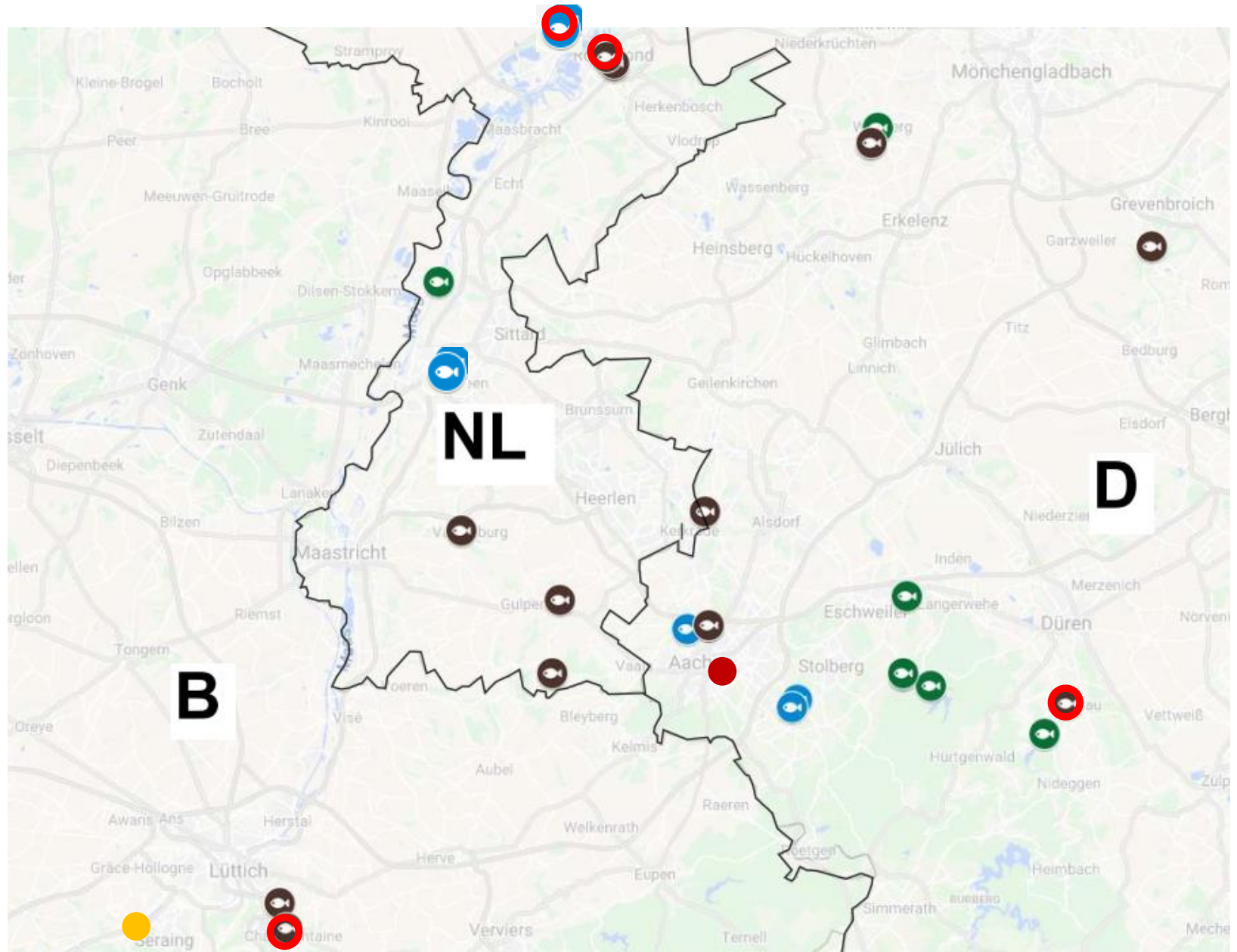


picture by Ingenieurbüro Floecksmühle GmbH

# 1. old fish passes: 1.2 hydraulic problems



## 2. projects in the Meuse catchment



Quelle: <https://drive.google.com/open?id=1IKSvJTrk0aCleb7fR44Z-Q0r4l8&usp=sharing>

## 2.1 fish pass project at Vesdre / Chaudfontaine / Belgium

---

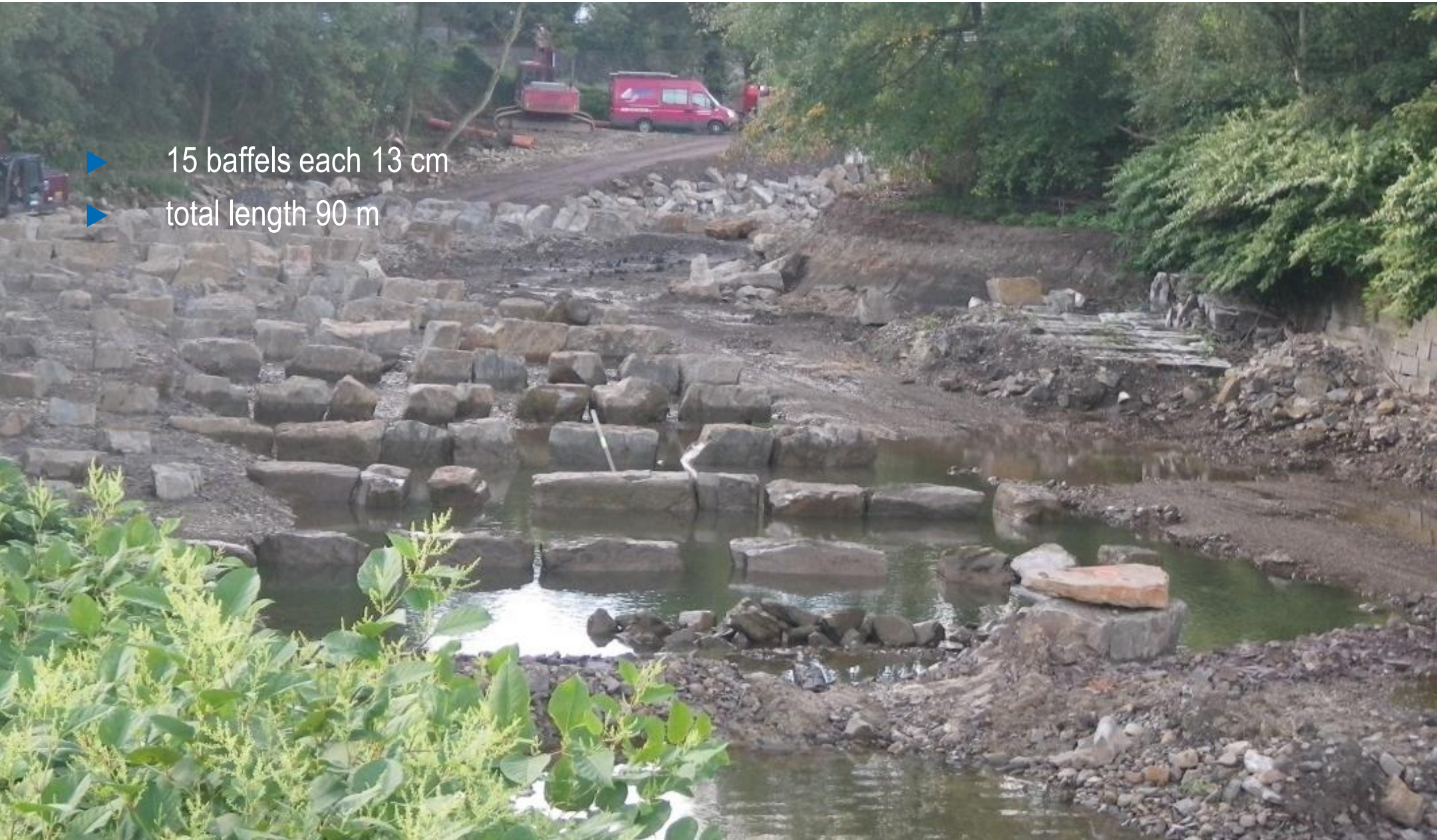
- ▶ Total height before demolition 2,3 m



picture by Ingenieurbüro Floecksmühle GmbH

## 2.1 fish pass project at Vesdre / Chaudfontaine / Belgium

- ▶ 15 baffels each 13 cm
- ▶ total length 90 m



picture by Ingenieurbüro Floecksmühle GmbH

## 2.1 fish pass project at Vesdre / Chaudfontaine / Belgium





## 2.2 fish pass project at Hambeek / Roermond / Netherland



Hambeek / Roermond, Ingenieurbüro Floecksmühle GmbH



Hambeek / Roermond, Ingenieurbüro Floecksmühle GmbH



Hambeek / Roermond, Ingenieurbüro Floecksmühle GmbH

## 2.3 fish pass project upstream at Roer / Roermond / Netherland

---



Ingenieurbüro Floecksmühle GmbH

## 2.4 fish pass project upstream: position and design of the entrance

---

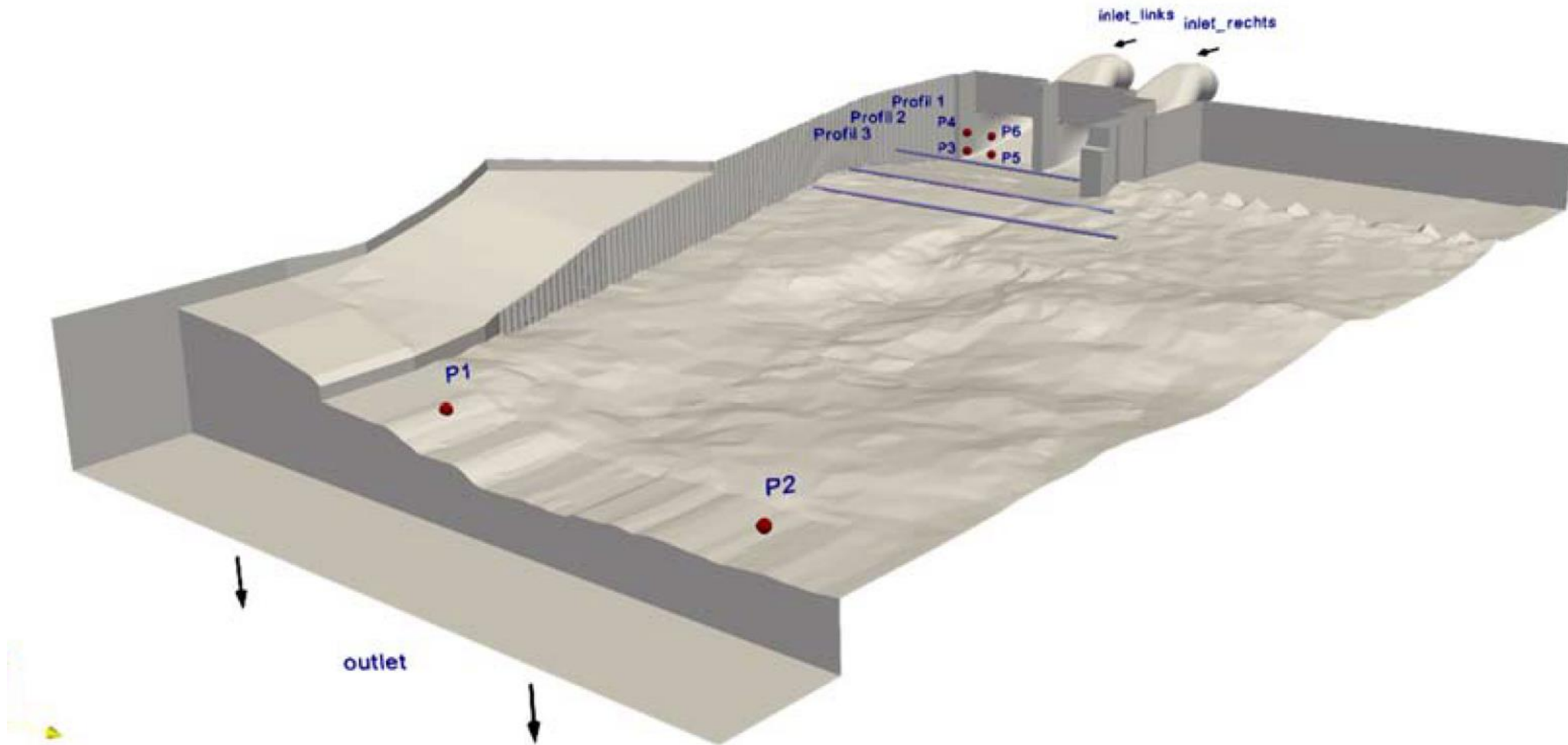


## 2.4 fish pass project upstream: position and design of the entrance

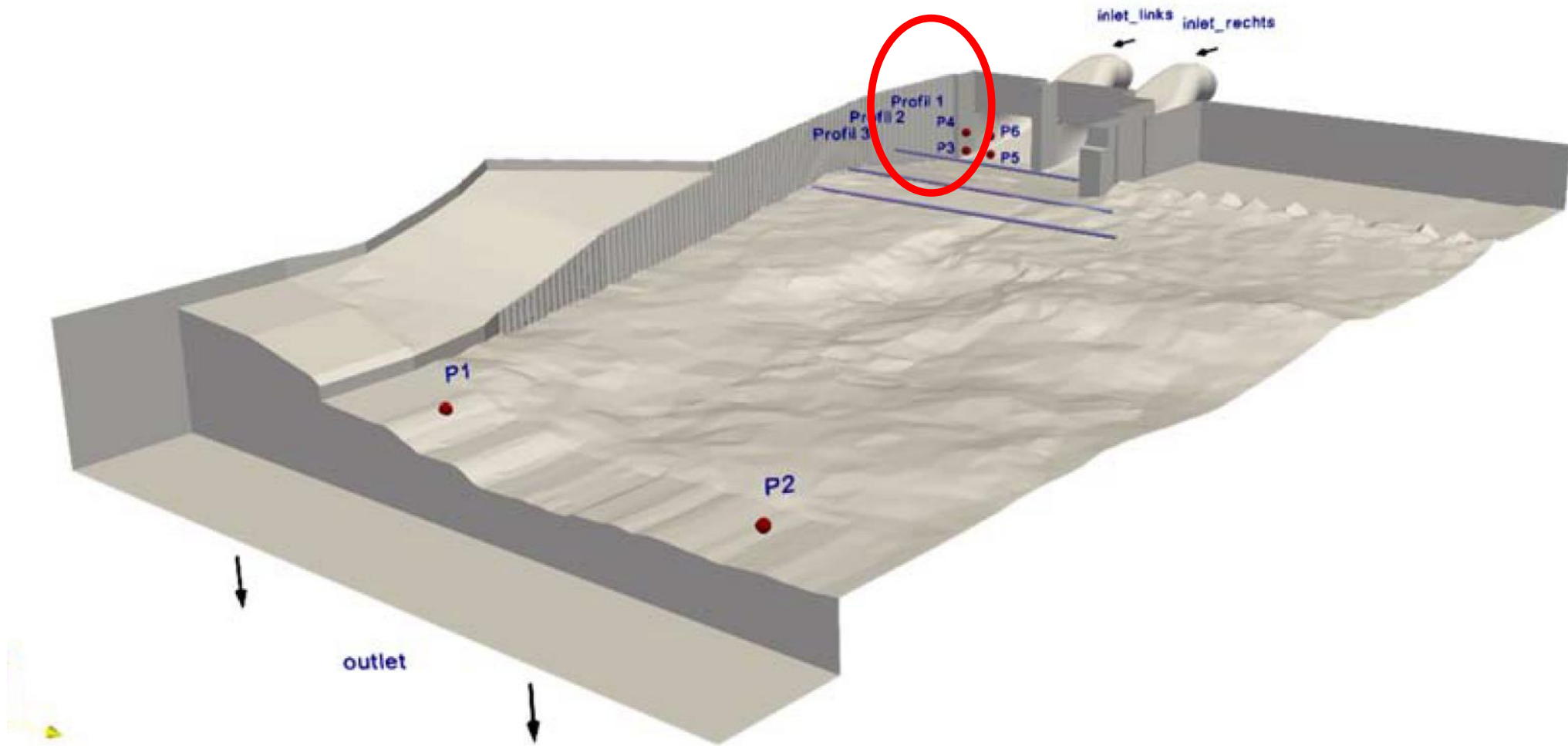
---



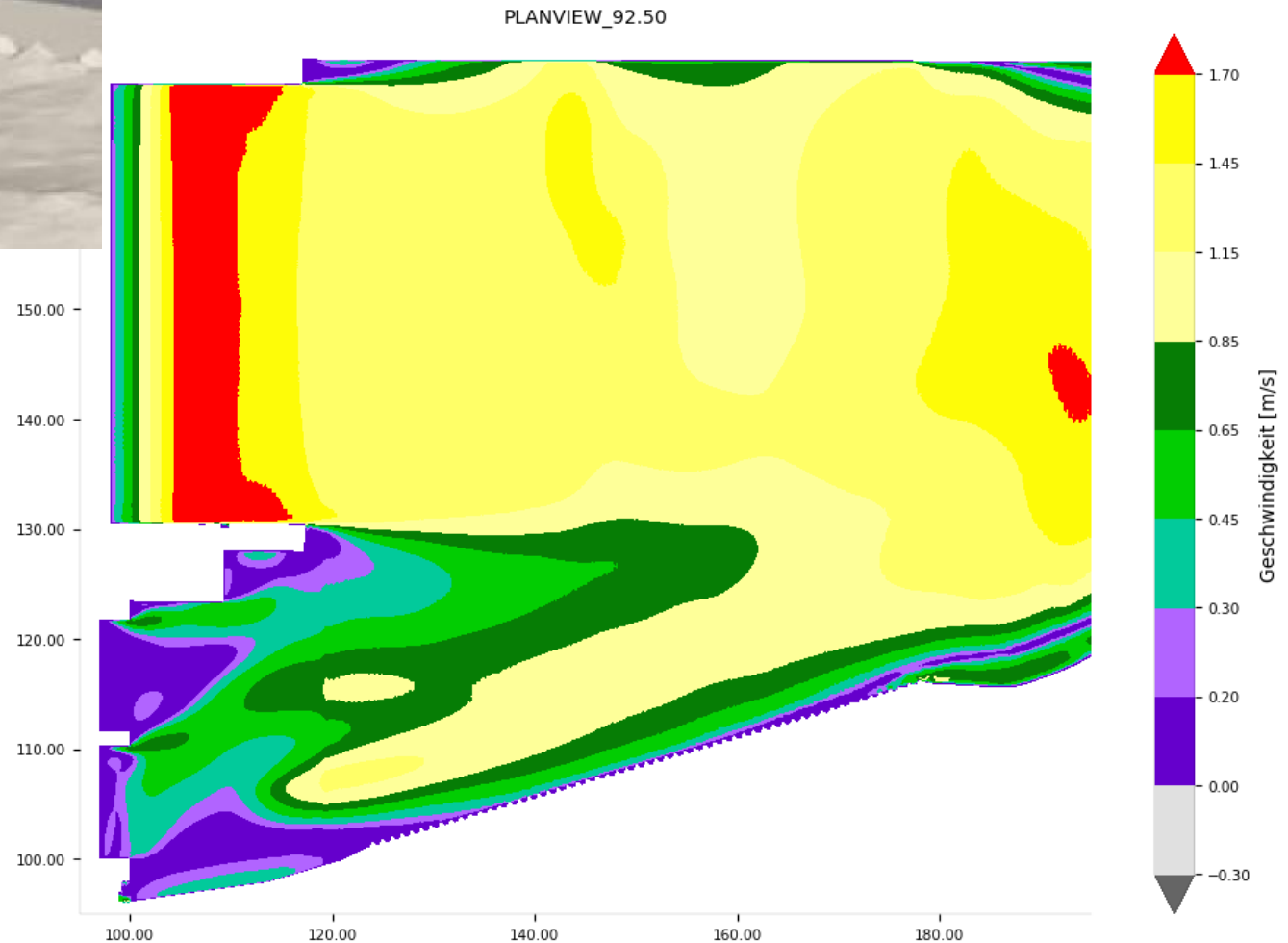
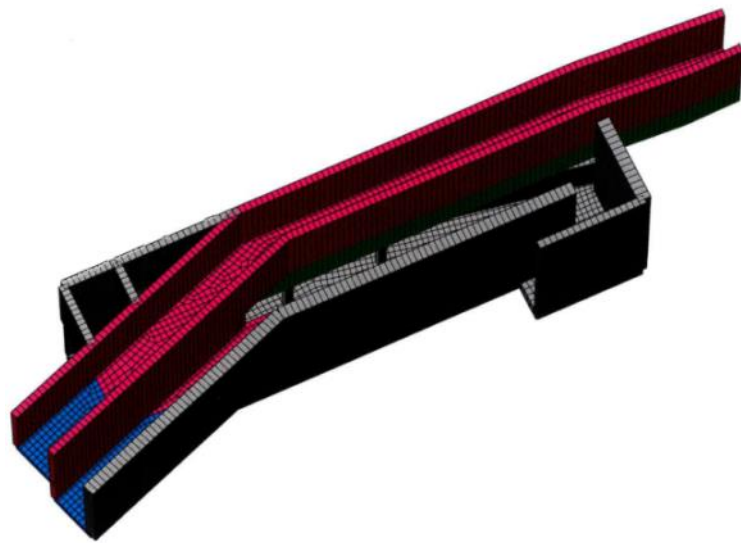
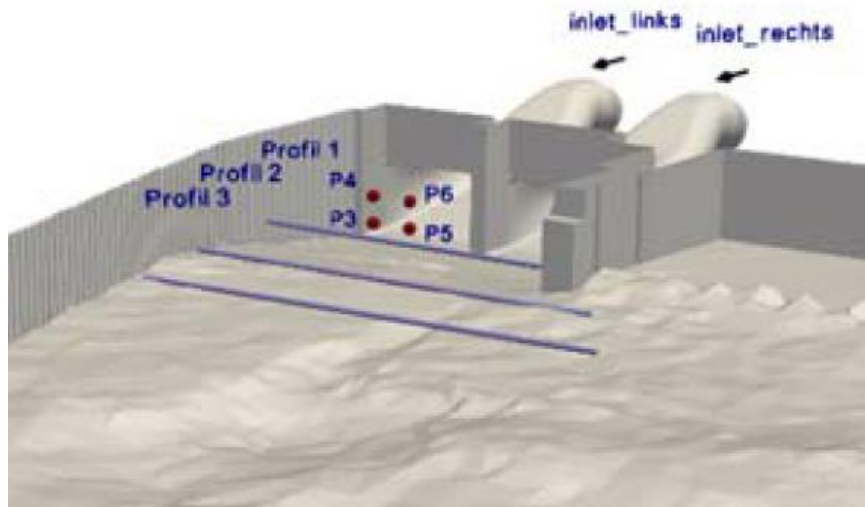
## 2.4 fish pass project upstream: position and design of the entrance



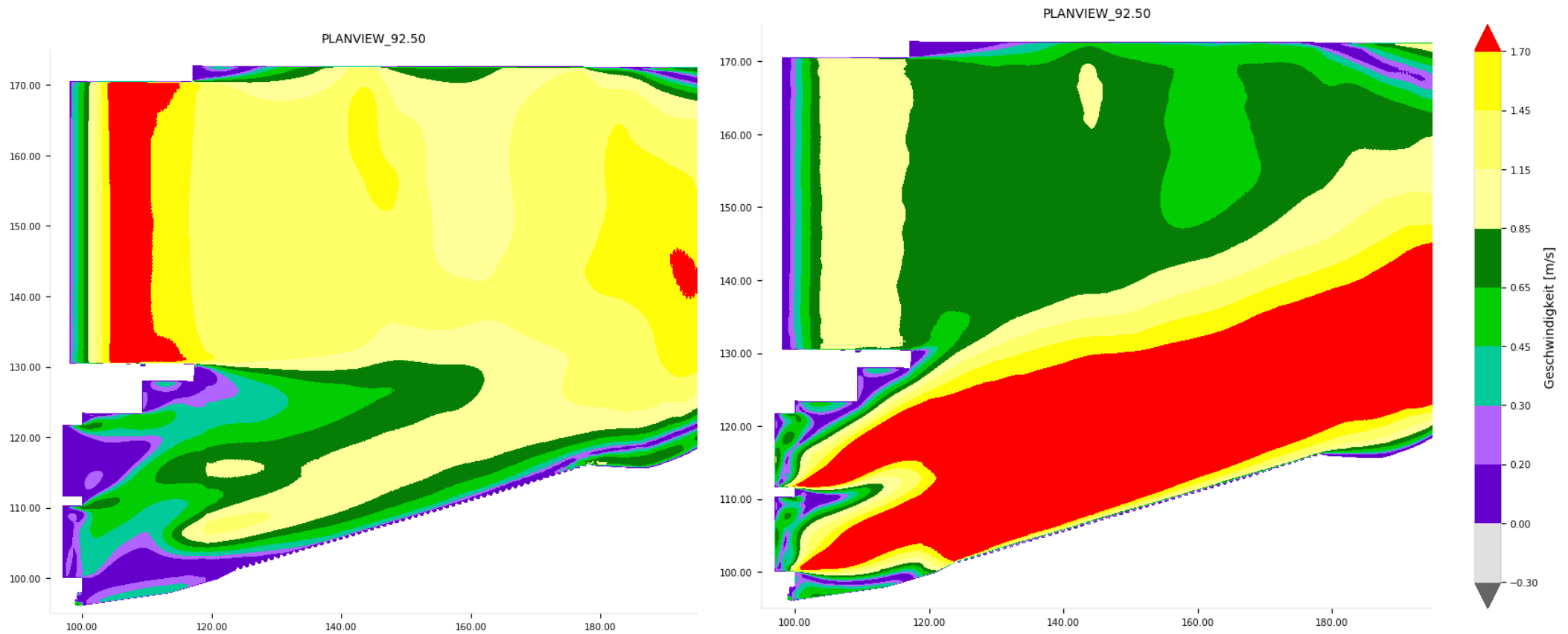
## 2.4 fish pass project upstream: position and design of the entrance



## 2.4 fish pass project upstream: position and design of the entrance



## 2.4 fish pass project upstream: position and design of the entrance



- Low discharge at HPP

high discharge at HPP



## 2.6 Visitor Center at Roermond (NL) and Lahn (D)



Visitorcenter Roermond, Ingenieurbüro Floecksmühle GmbH



Visitorcenter Lahn / Gießen / Germany, Ingenieurbüro Floecksmühle GmbH



# 3 fish protection and down-stream systems



# 3.1 protection and down-stream Roer / Roermond / Netherland



EBEL 2013

EBEL 2013

# 3.1 protection and down-stream Roer / Roermond / Netherland



Ingenieurbüro Floecksmühle GmbH



Ingenieurbüro Floecksmühle GmbH

## 3.2 protection and down-stream Roer / Dueren / Germany



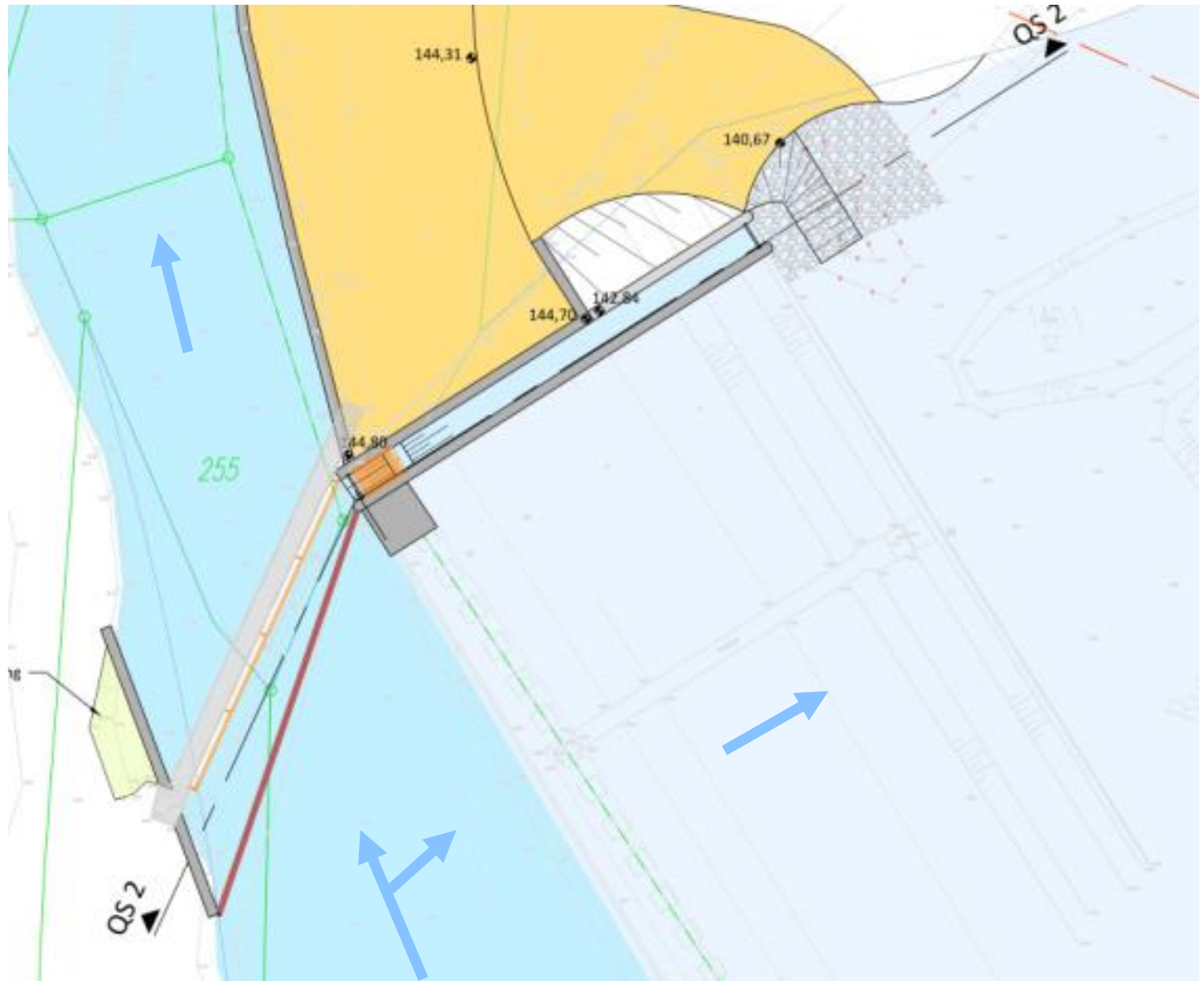
Picture by Ingenieurbüro Floecksmühle GmbH



bar spacing before rebuilding: 250 mm

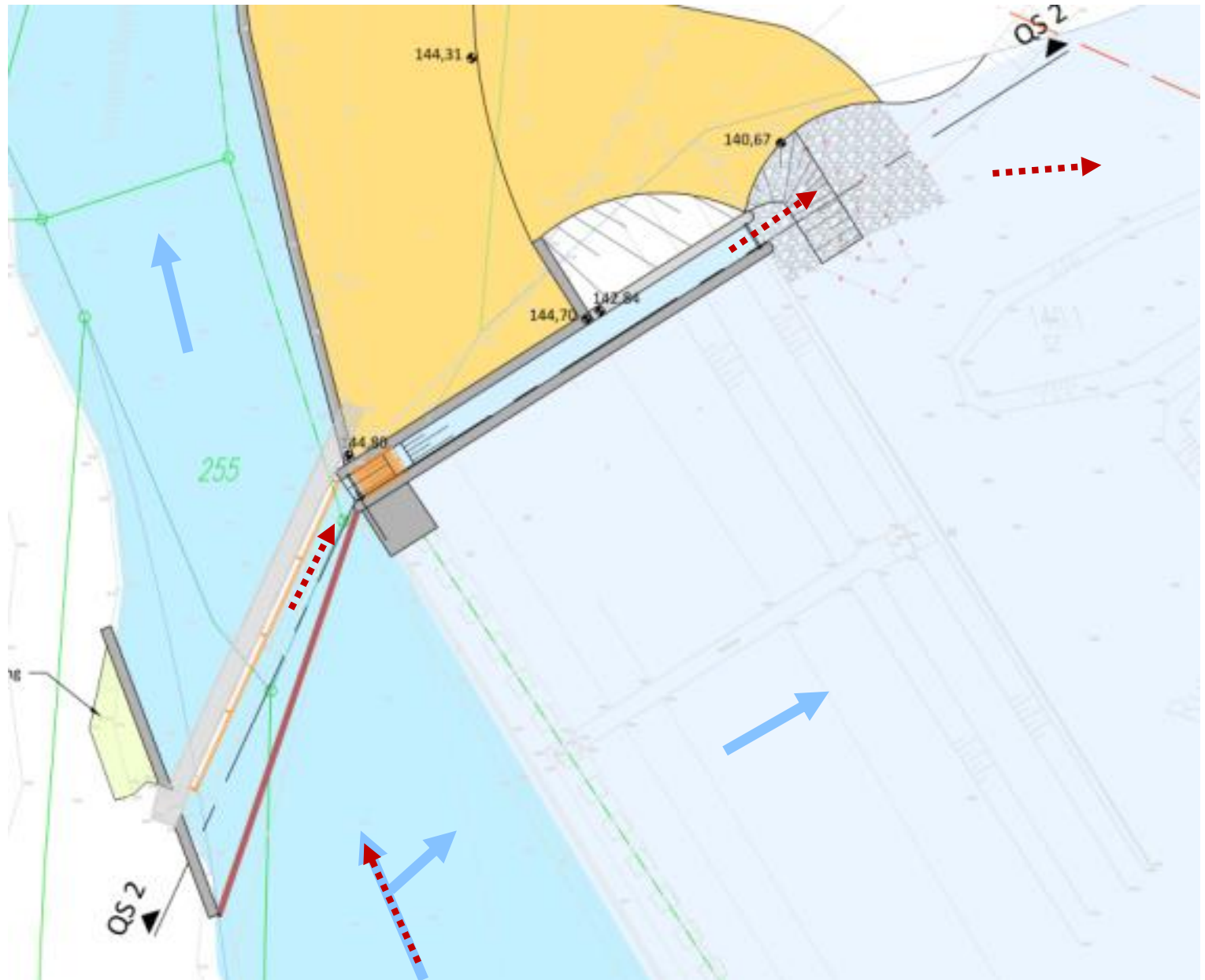
Rage today; picture by Ingenieurbüro Floecksmühle GmbH

## 3.2 protection and down-stream Roer / Dueren / Germany

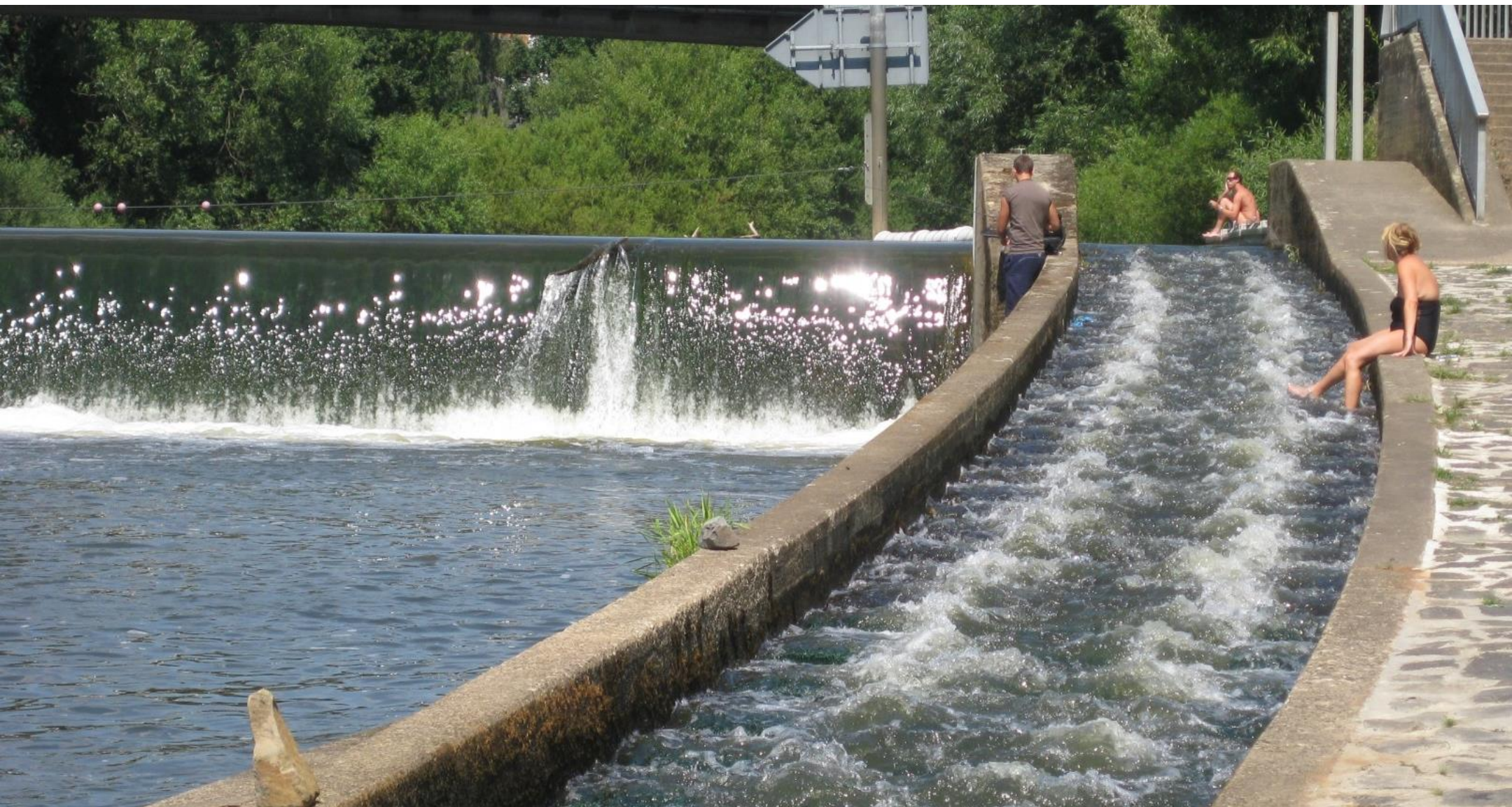


Protection system and down-stream system: design by Ingenieurbüro Floecksmühle GmbH

## 3.2 protection and down-stream Roer / Dueren / Germany



Protection system and down-stream system: design by Ingenieurbüro Floecksmühle GmbH



Ingenieurbüro Floecksmühle GmbH



# Thank you !

---

