

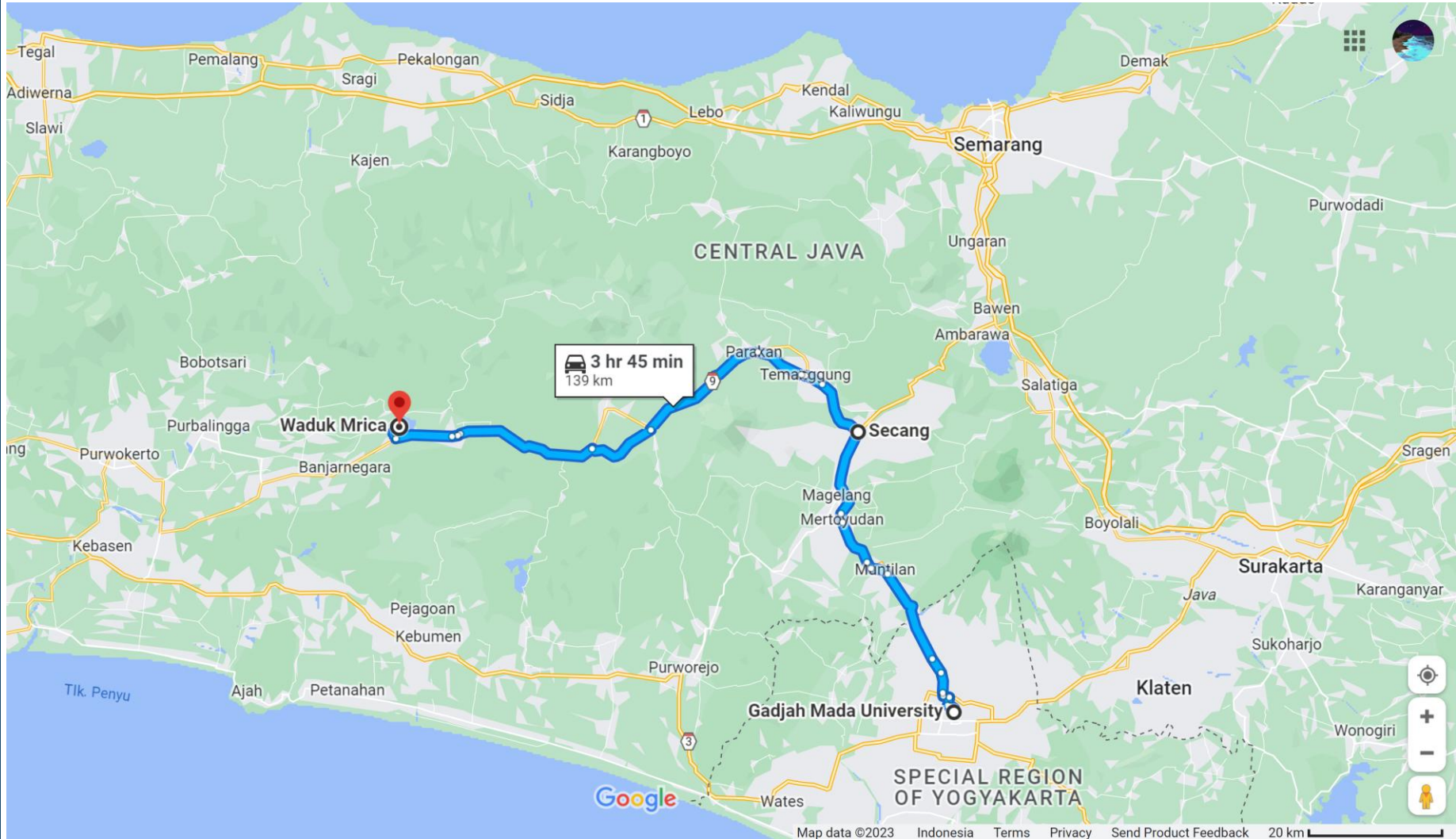


UNIVERSITAS GADJAH MADA
DEPARTEMEN TEKNIK SIPIL DAN LINGKUNGAN
PRODI TEKNIK SUMBER DAYA AIR

Kuliah Lapangan Struktur Bangunan Air

Bendungan Pangsar Sudirman (Bendungan Mrica Jawa Tengah)





S. Serayu
hulu di Peg. Dieng
muara di Cilacap

Waduk Mirica

S. Serayu

Banjarnegara

S. Serayu

3.94 km

Image © 2023 Maxar Technologies
Image © 2023 Airbus





Waduk Bendungan

waduk

pelimpah
(spillway)

bendungan

intake

gedung sentral
(powerhouse)

gardu induk
(switchyard)

S. Serayu

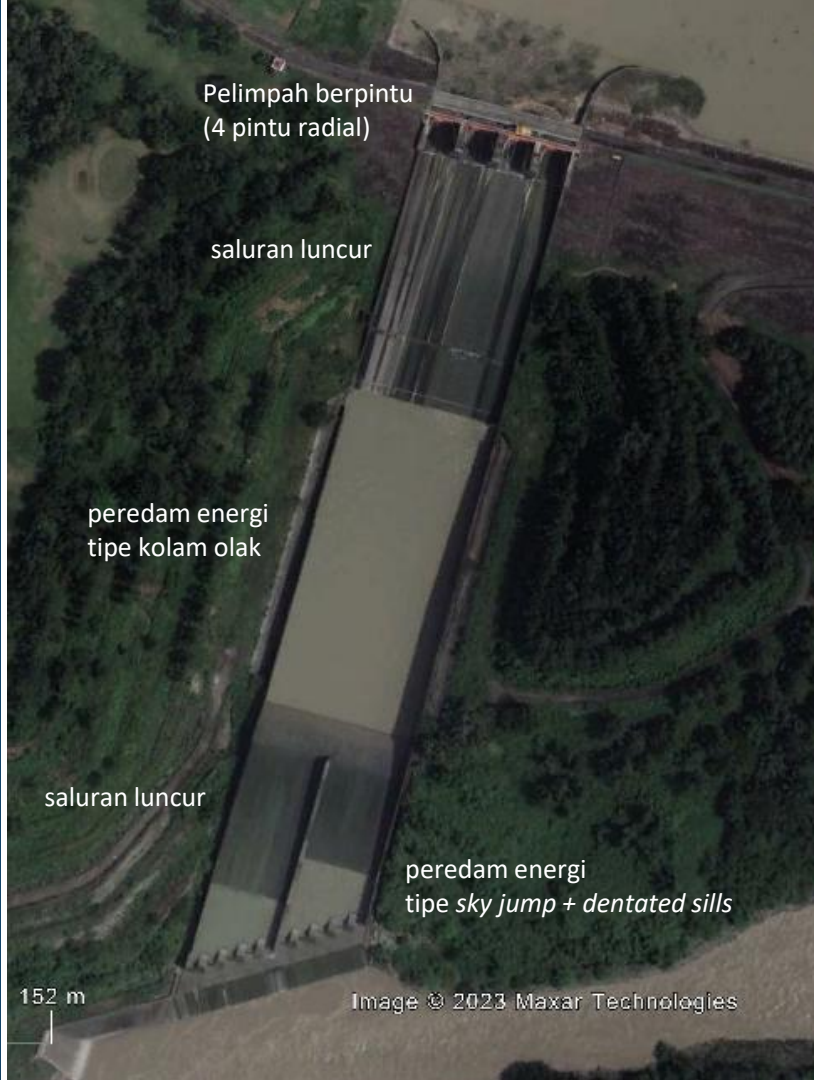
248 m

Image © 2023 Maxar Technologies

Bendungan tipe urugan tanah



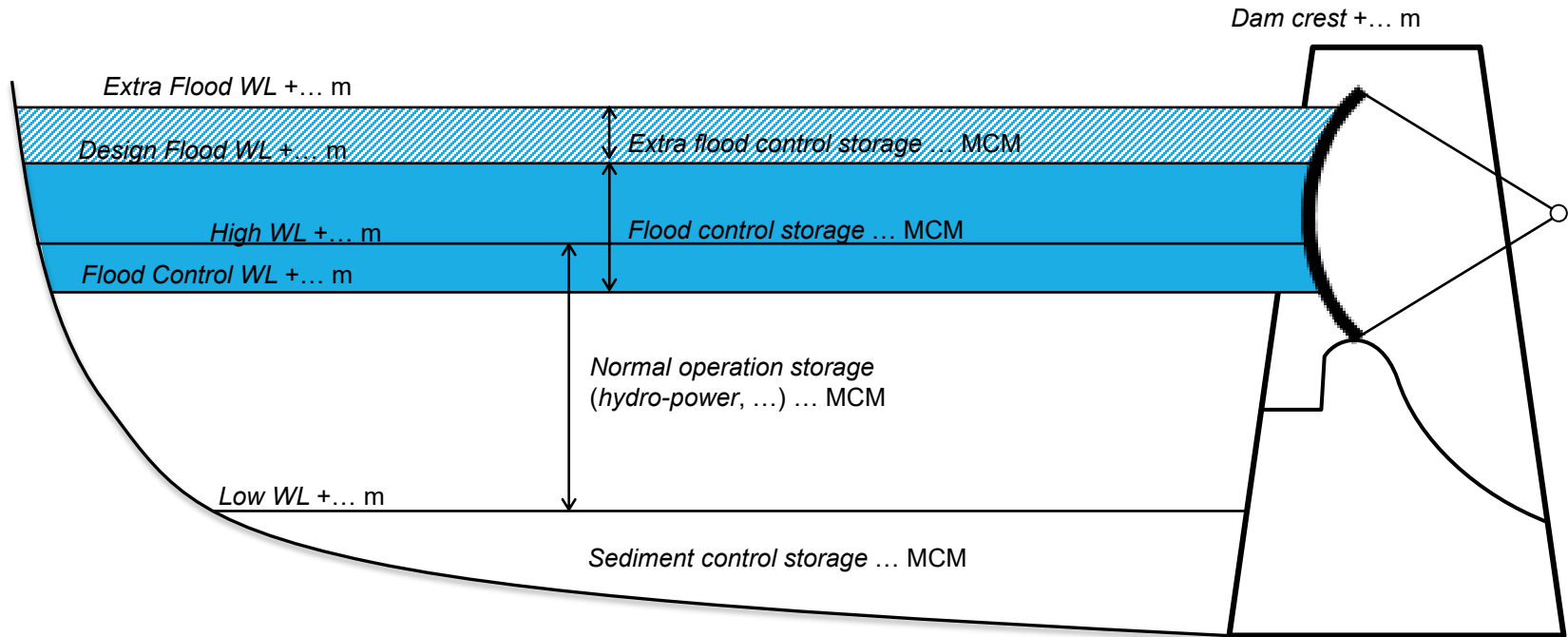




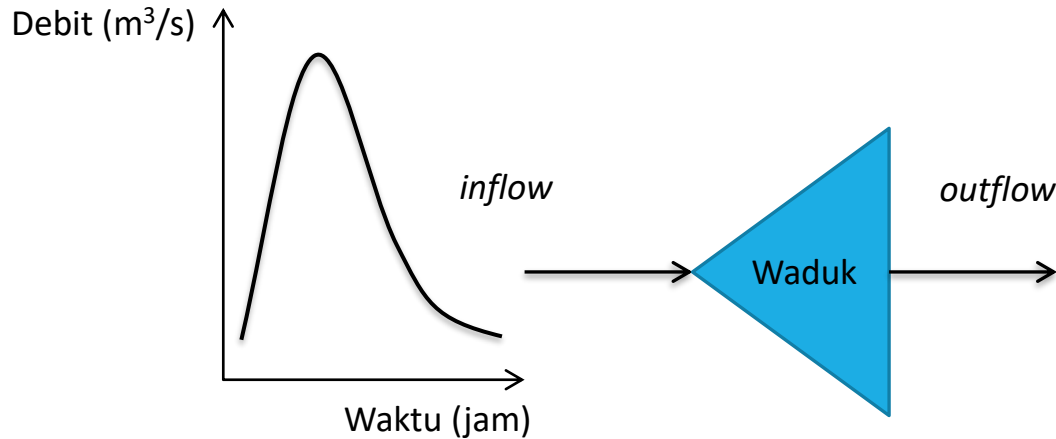
Pelimpah (*spillway*)



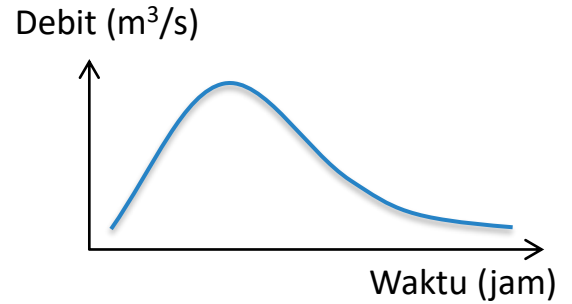
Pelimpah Berpintu



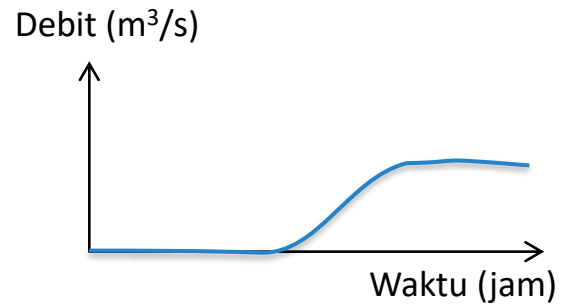
Inflow-outflow saat banjir



Pelimpah tak berpintu



Pelimpah berpintu



Bendungan Mrica

PLTA



lereng hilir bendungan

Powerhouse



- turbin
- generator

GEDUNG SENTRAL
PLTA PANGLIMA BESAR SOEDIRMAN

tailrace

bottom outlet (drawdown conduit)

PLTA

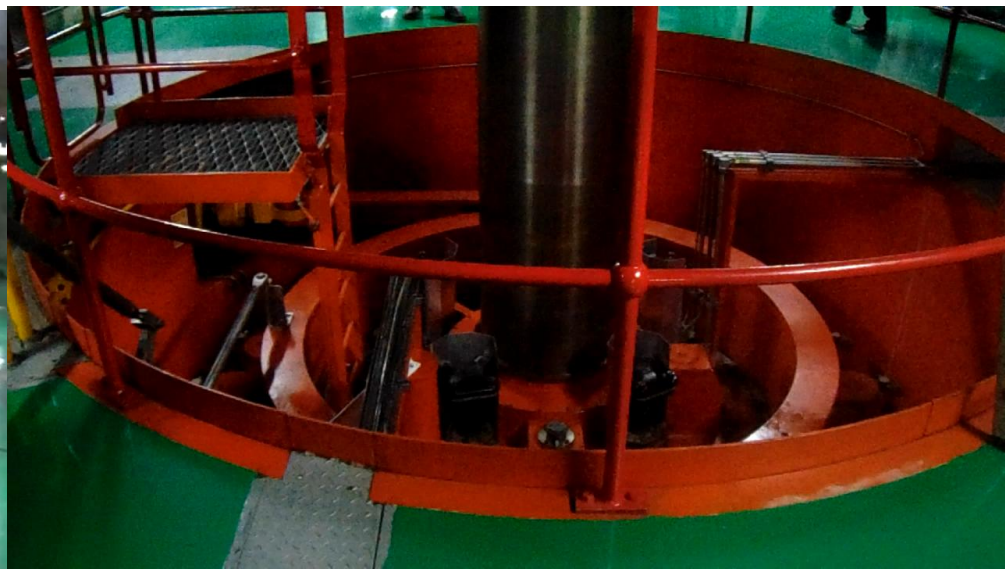
| | |
|------------------|---|
| PLANT ANIMATIONS |  |
| System Operator | <p data-bbox="1331 601 1501 620">TRANSPOWER </p> <h2 data-bbox="741 667 1006 705">Hydro generator</h2> <p data-bbox="741 719 1286 798">This animation looks inside a hydro generator, examines its components and shows how water drives the turbine to generate power onto the electricity grid.</p> <p data-bbox="741 893 1155 951">Disclaimer: This animation has been developed for training purposes only, and does not accurately represent any specific item of plant on the New Zealand power system.</p> <p data-bbox="741 975 944 987">© Transpower New Zealand Ltd 2011</p> |

generator #3 (60.3 MW)

generator #2 (60.3 MW)

generator #1 (60.3 MW)







powerhouse



tailrace

tailrace

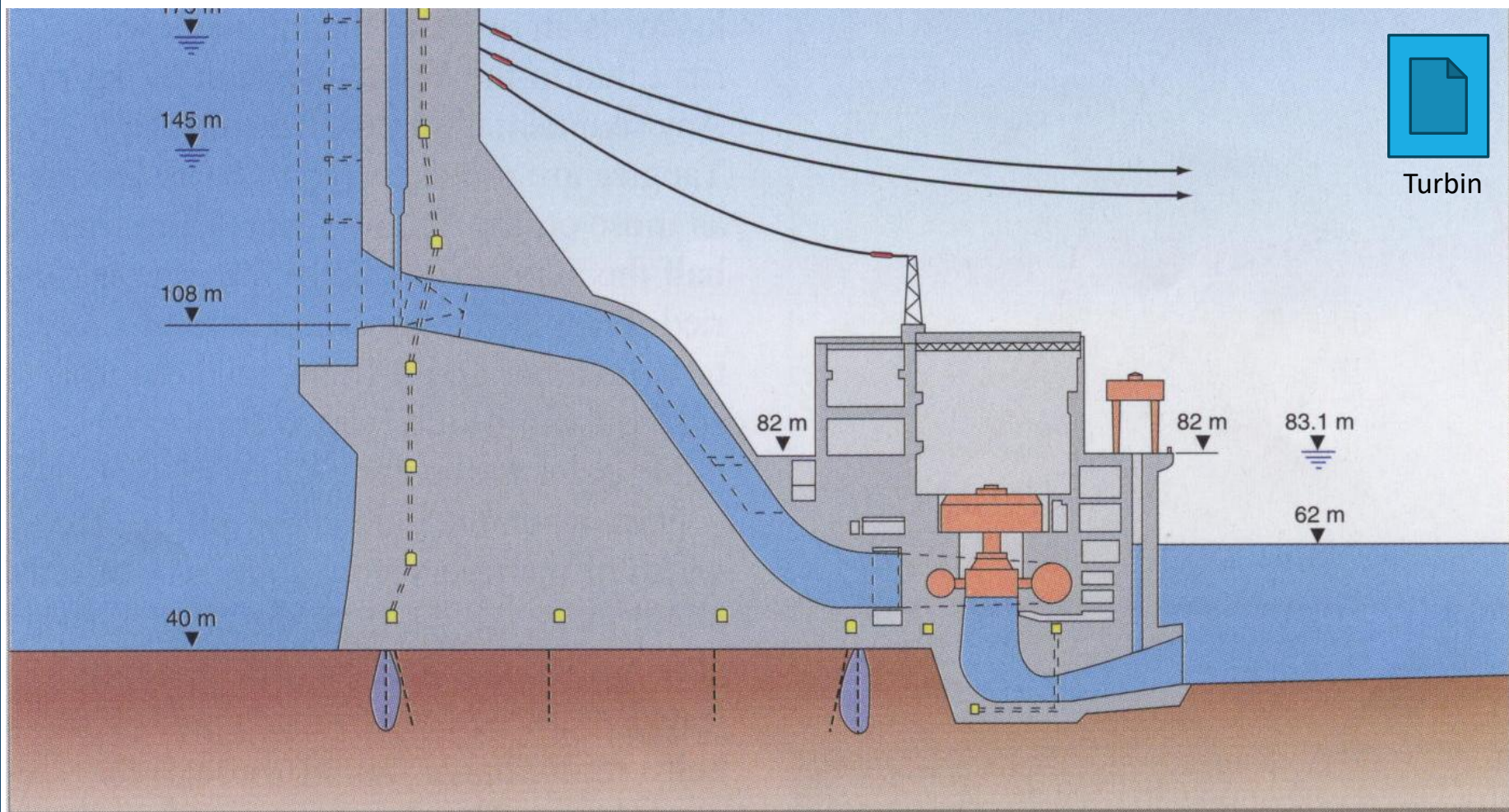


Fig. 12. Cross-section through power station showing one of 26, 700 MW Francis turbines

Bendungan Mrica

Sedimen di Waduk

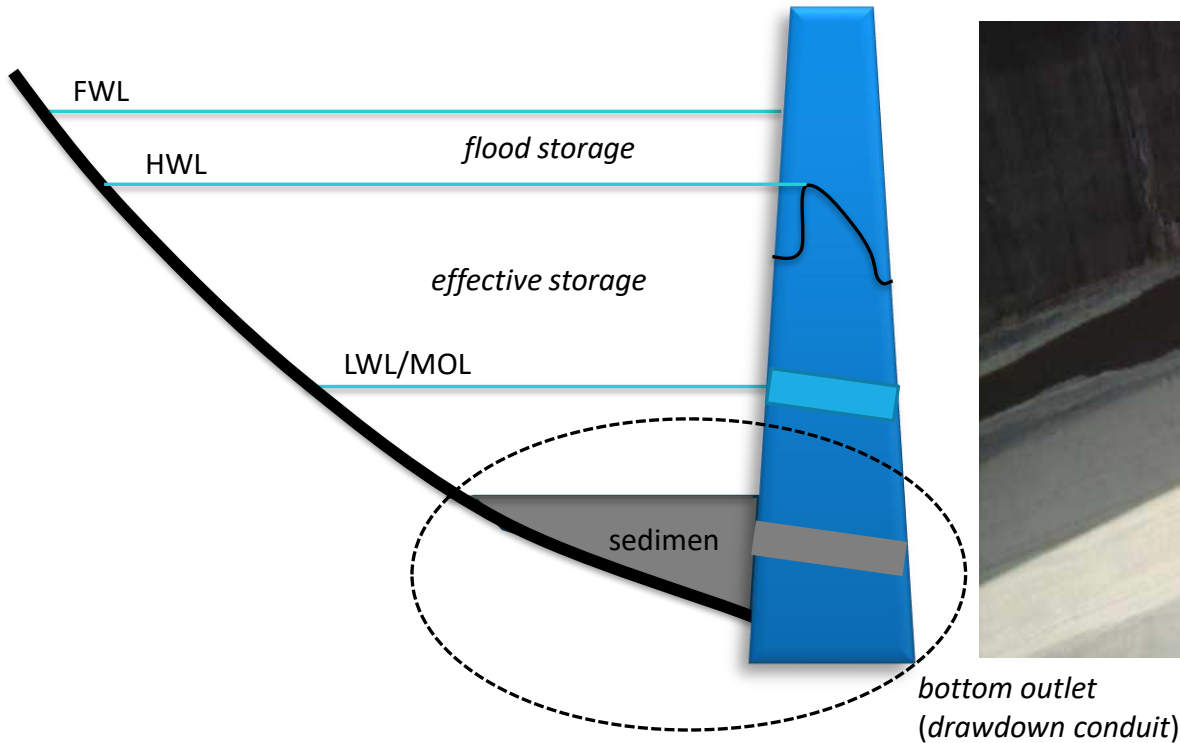
Manajemen Sedimen di Waduk

GEDUNG SENTRAL
PLTA PANGLIMA BESAR SOEDIRMAN

*bottom outlet
(drawdown conduit)*



Manajemen Sedimen di Waduk



Kunjungan Dosen FT UGM ke PLTA Mrica, 2016



Tugas

- Data teknis bendungan
 - tipe, tinggi, elevasi mercu
 - outlet works
 - ancillary works
- Data teknis waduk
 - volume
 - luas
 - kurva karakteristik waduk (elevasi m.a. vs volume, elevasi m.a. vs luas)
 - operasi waduk