

# FILIATRINOS DAM

## CONSTRUCTION



# Construction Company



- Founded in 1987
- Ranks among the top construction groups in Greece
- International presence in 7 countries
- Basic activities:
  - Renewable energy sources projects
  - Telecommunications
  - Environmental projects
  - Construction projects
  - Infrastructure projects

# Area of construction

- Near Filiatra city (about 10.000 people)
- Agriculture is the mainstay of region economy





# Features of the dam (1/2)

- Project budget 35.000.000 €
- Material of embankment: 430.000 m<sup>3</sup> of lean roller compacted concrete (51kg cement and 23kg flying ash)
- Length: 246 m
- Width: 7m + 2m both sidewalks upon the coronation and 96m upon the foundation
- Length of spillway 24 meters
- Crest level +215,20m and 212,00m on the spillway
- Height: 55m from foundation and 45m from natural ground

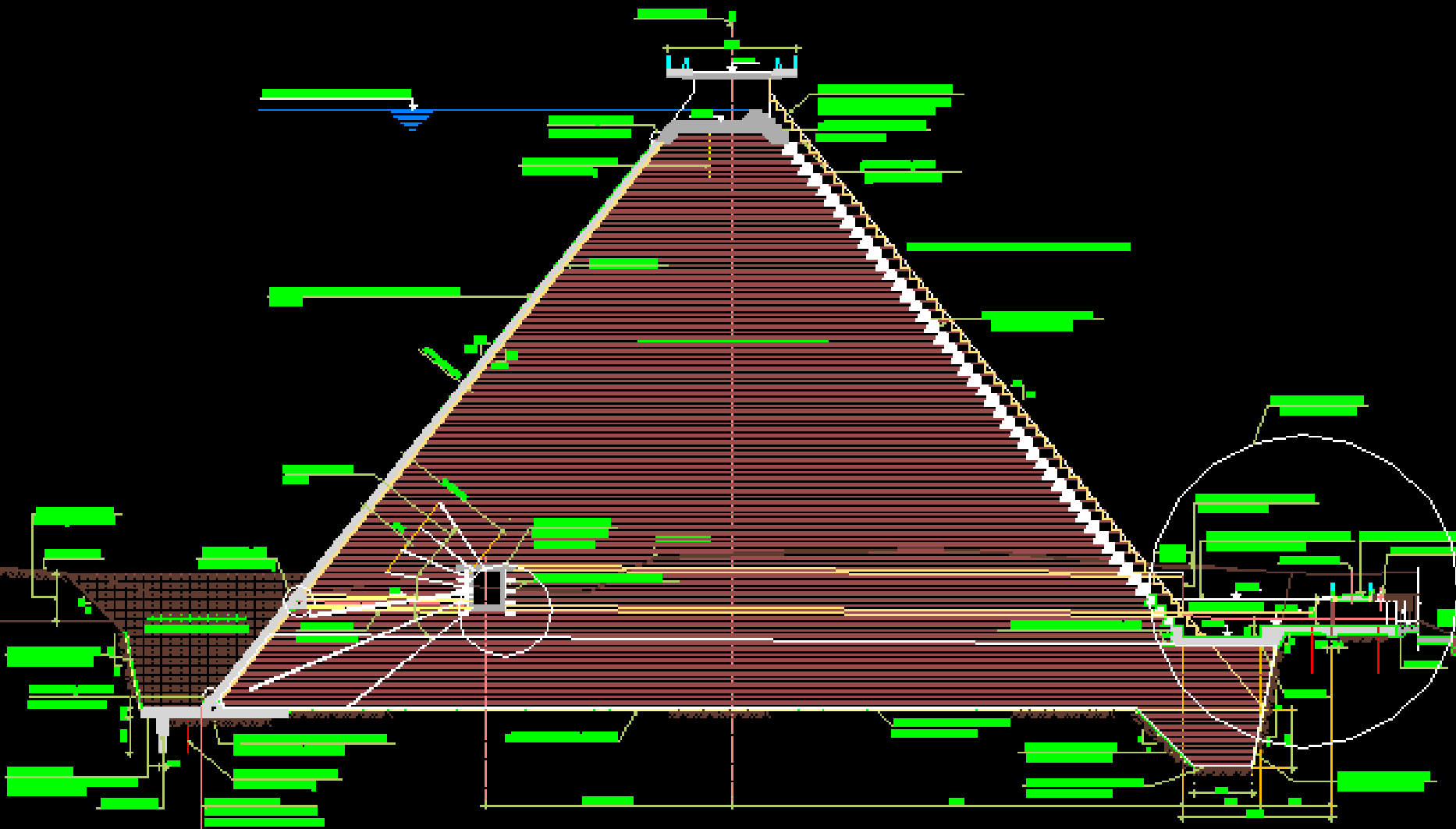
# Features of the dam (2/2)

- Waterproofing by reinforced concrete slab of  $10.200\text{m}^2$

- Upstream slope 1



- Reservoir volume:  $7.810.000\text{ m}^3$
- Purpose of the dam: irrigation of  $30.000.000\text{ m}^2$
- Usable volume of reservoir :  $7.630.000\text{ m}^3$
- Annual water volume available for consumption :  $9.000.000\text{ m}^3$
- Untill 22/10/2012 the embankment of the dam has been made up to the level +193,90 m



TYPICAL SECTION

# Construction steps



The site of the dam before the construction



# Construction steps



Exploratory tunnel during the project design



# Construction steps



The site of the dam during the construction

# Construction steps



Trimming and transplanting olive trees



# Construction steps



Temporary river diversion



# Construction steps



Shortly after the start of excavation



# Construction steps



Excavations in grades for the transition of the machinery and equipment :

1) ground core sampling 2) grout curtain / umbrella

# Construction steps



Excavations in grades for the transition of the machinery and equipment :

1) ground core sampling 2) grout curtain / umbrella



# Construction steps



Ground core sampling



# Construction steps



Excavation for the construction of the plinth



# Construction steps



Cement grouting



# Construction steps



Drilling for the plinth anchors

# Construction steps



Plinth anchors



# Construction steps



Anchors

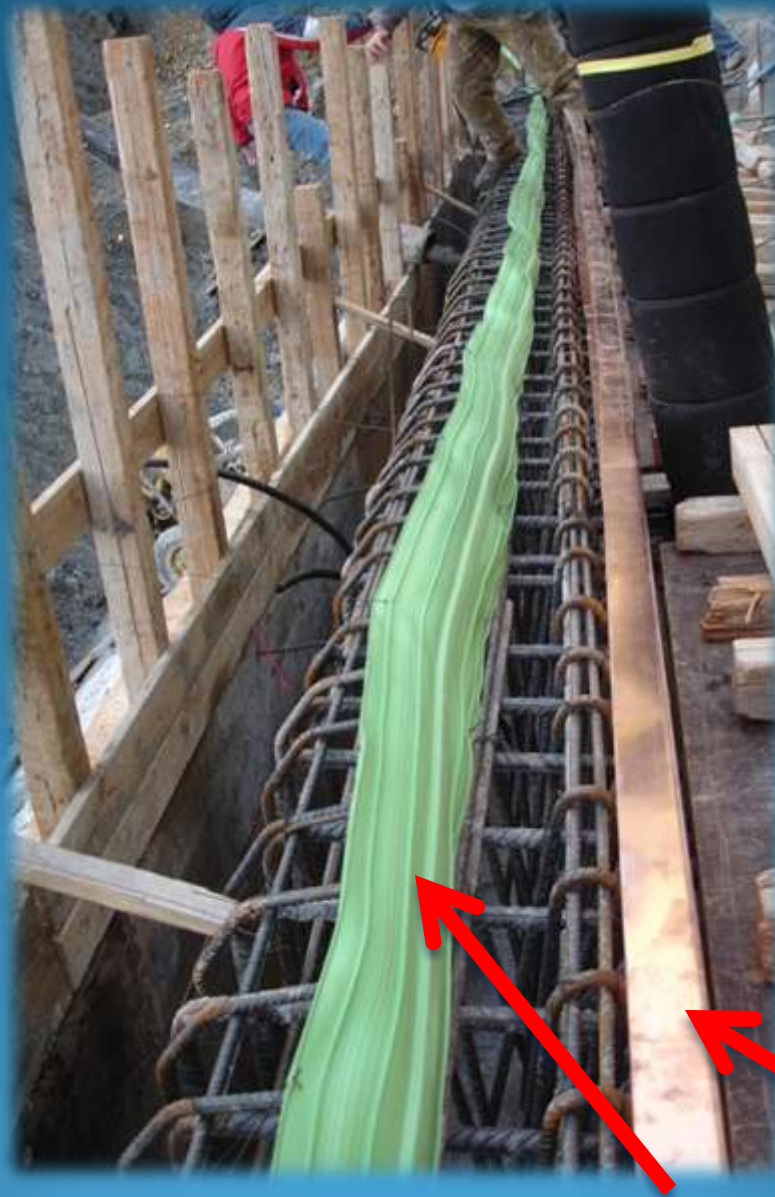


# Construction steps



Building the plinth

# Construction steps



Plinth's head (waterproofing by PVC and copper)



# Construction steps



The plinth



# Construction steps



The plinth on the right side finished



# Construction steps



The plinth on the left side during the construction

# Construction steps



The plinth on the left side



# Construction steps



General excavation

# Construction steps



Facilities for the lean RCC and concrete production



# Construction steps



Installation of belt conveyors

# Construction steps



Installation of belt conveyors



# Construction steps



Belt conveyors

# Construction steps



Trial test section (by lean RCC)



# Construction steps



Compaction test on the trial section

# Construction steps



Ready to begin the embankment of the dam



# Construction steps



Constructing a part of the embankment for the final diversion of the river

# Construction steps



Constructing a part of the embankment for the final diversion of the river



# Construction steps



Box culvert for the final diversion of the river



# Construction steps



Box culvert for the final diversion of the river



# Construction steps



Box culvert for the final diversion of the river



# Construction steps



The final diversion finished. Excavations on the back



# Construction steps



Preparation for the embankment on the left side



# Construction steps



Building the final section of the plinth



# Construction steps



Embankment on the left side

# Construction steps



Anchors on the bottom of the spillway



# Construction steps



Grouting the anchors

# Construction steps



Tranquil basin



# Construction steps



Foundation of the tranquil basin



# Construction steps



Building the bridge over the tranquil basin



# Construction steps



The main upper drainage pipe

# Construction steps



Building the drainage culvert



# Construction steps



Building the drainage culvert



# Construction steps



The drainage culvert finished



# Construction steps



The drainage culvert finished

# Construction steps



Upstream slope



# Construction steps



**DEC 2011**

**JAN 12**

**JUN 12**

**SEP 12**

**TODAY**

# Construction steps



DEC 2011

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**TODAY**

# Construction steps



Upstream side



# Construction steps



Downstream side

# Construction steps



Downstream steps and the spillway



# Thank you for your attention



**FILIATRINOS DAM**