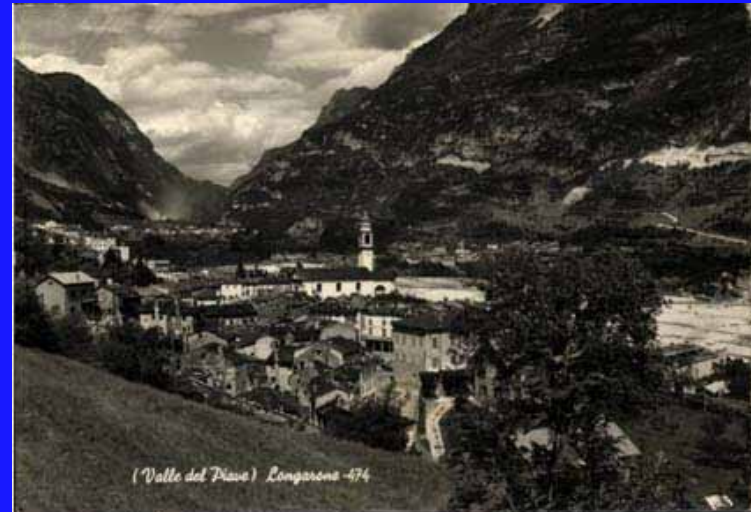
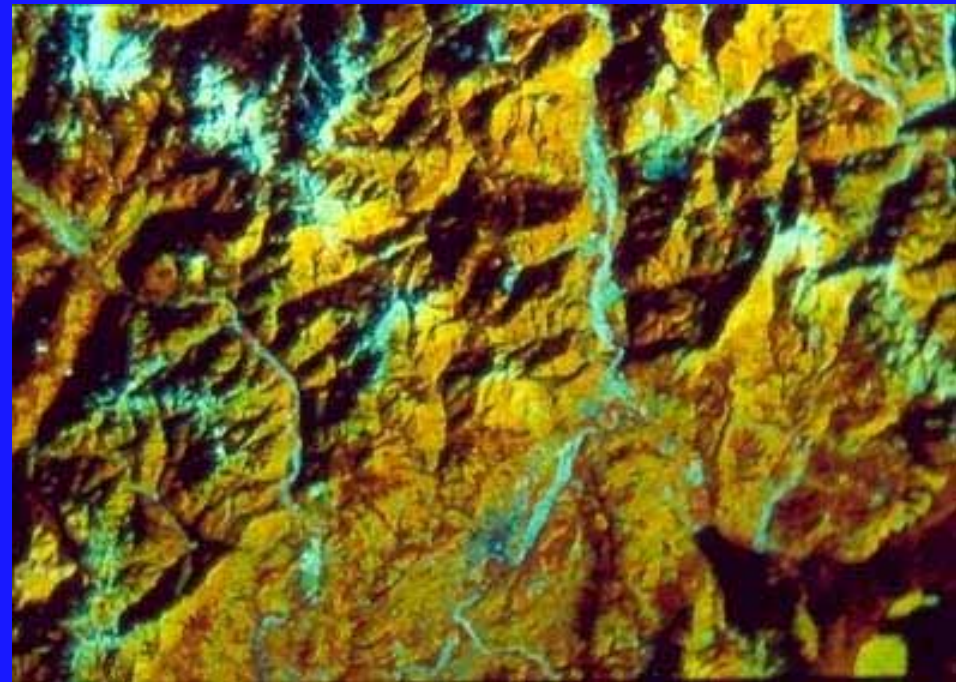
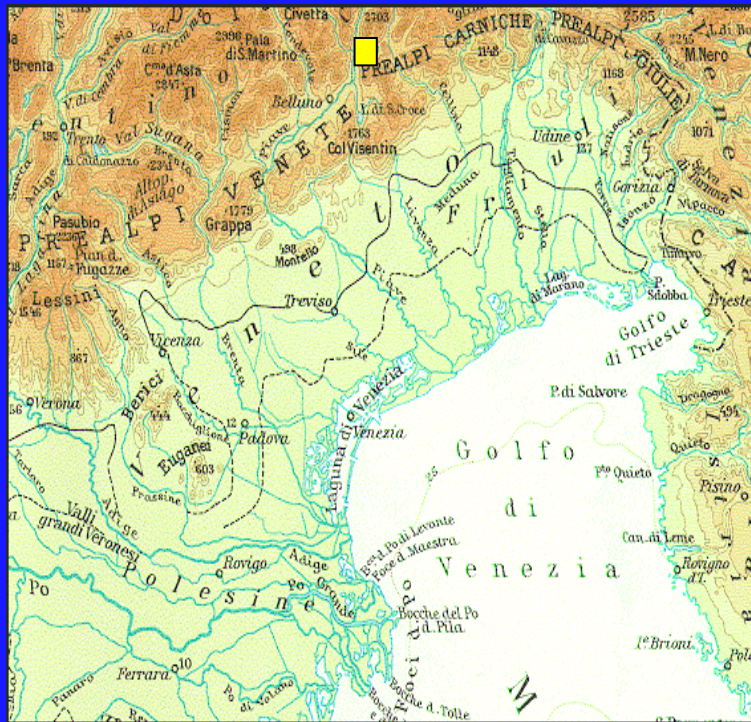


The Vajont Dam Disaster

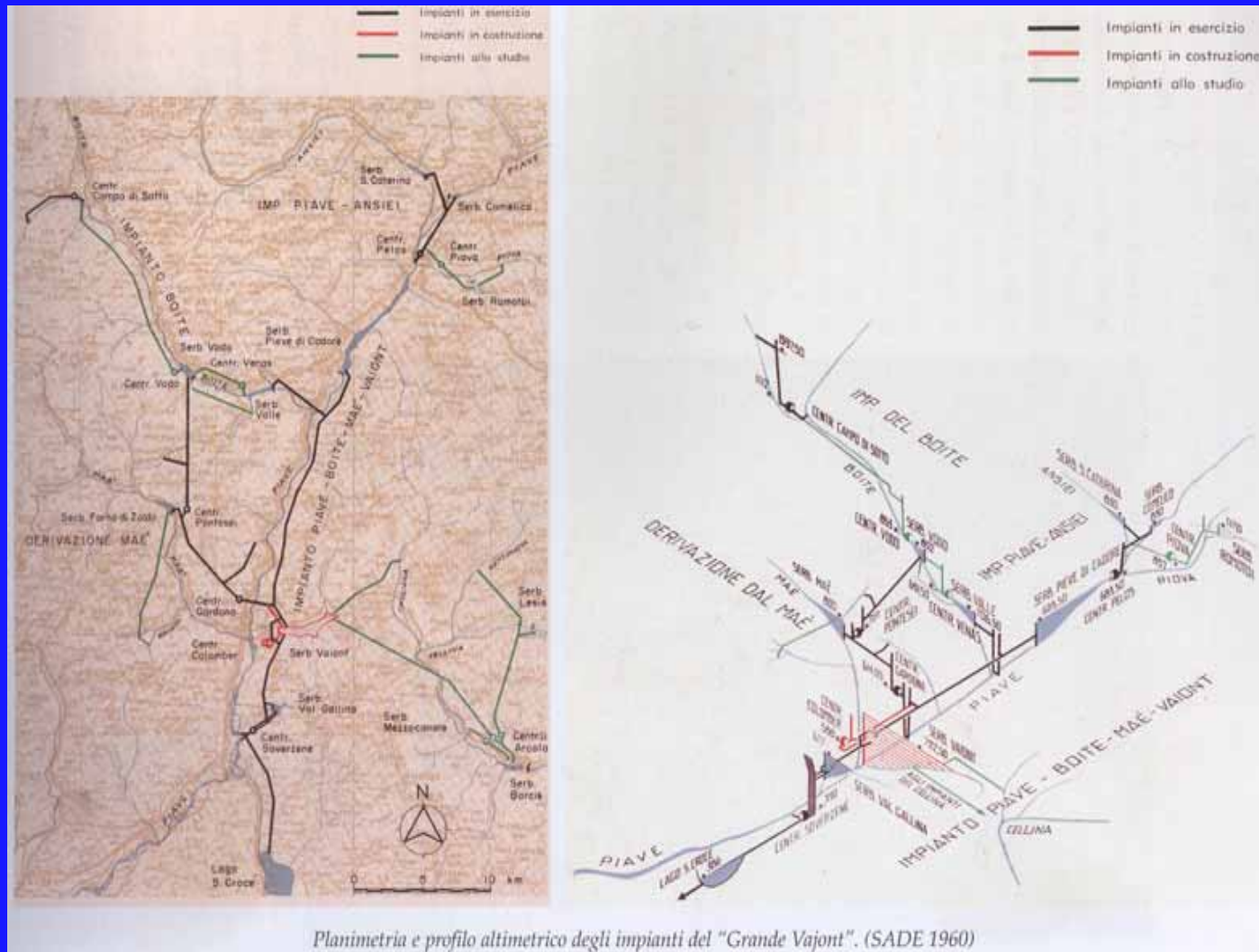
*TeLL-Net Kick-off Assembly
Kobe Japan 19-20 January 2006*



The Vajont reservoir is located along the lower reaches of the River Vajont, close to its confluence with the R. Piave, some 100 km NNW of Venice



The reservoir was created artificially in 1960 after the T. Vajont was dammed as part of regional expansion in hydroelectric-power generation



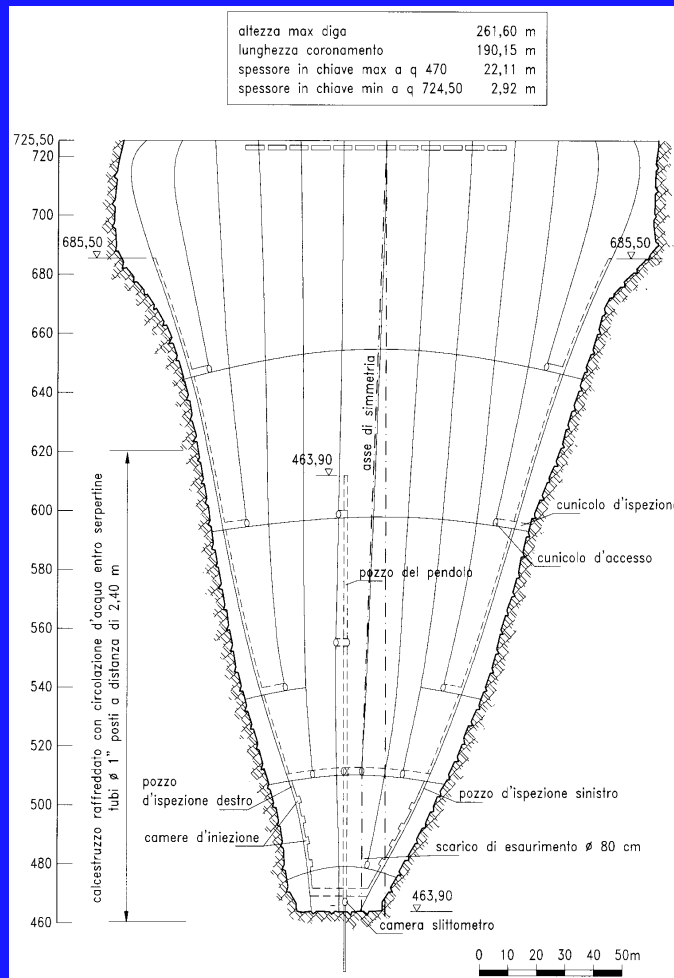
Planimetria e profilo altimetrico degli impianti del "Grande Vajont". (SADE 1960)

The Vajont Dam Disaster

PIAVE-BOITE-MAE-VAJONT POWER PROJECT

Reservoir	Water capacity (ml m ³)
Comelico	2.08
Auronzo S. Caterina	7.00
Pieve di Cadore	68.50
Vodo di Cadore	1.19
Valle di Cadore	4.90
Pontesei	10.00
Vajont	168.71
Val Gallina	6.40

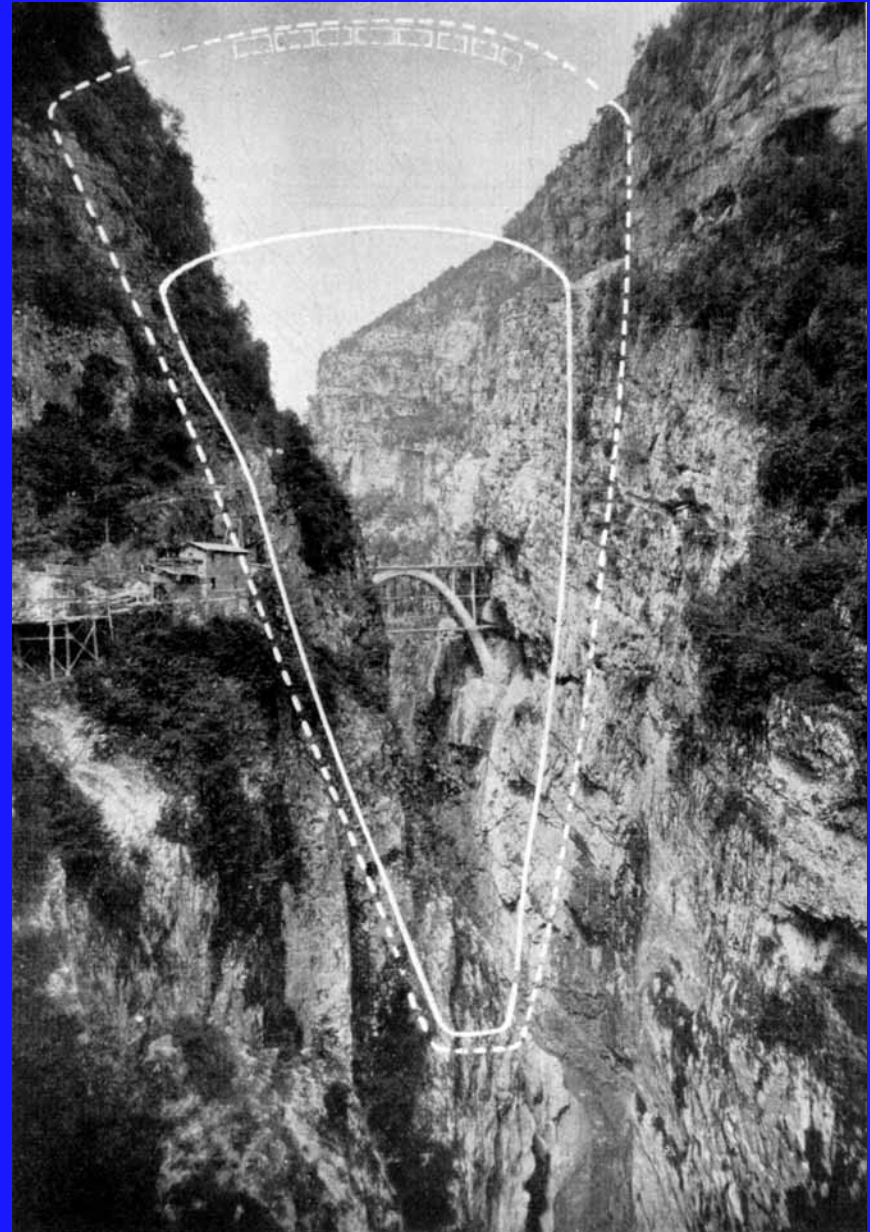
The dam is 261.60 m high and 190 m across the top, and at the time of construction was the highest and one of the most advanced double-arched dams in the world.

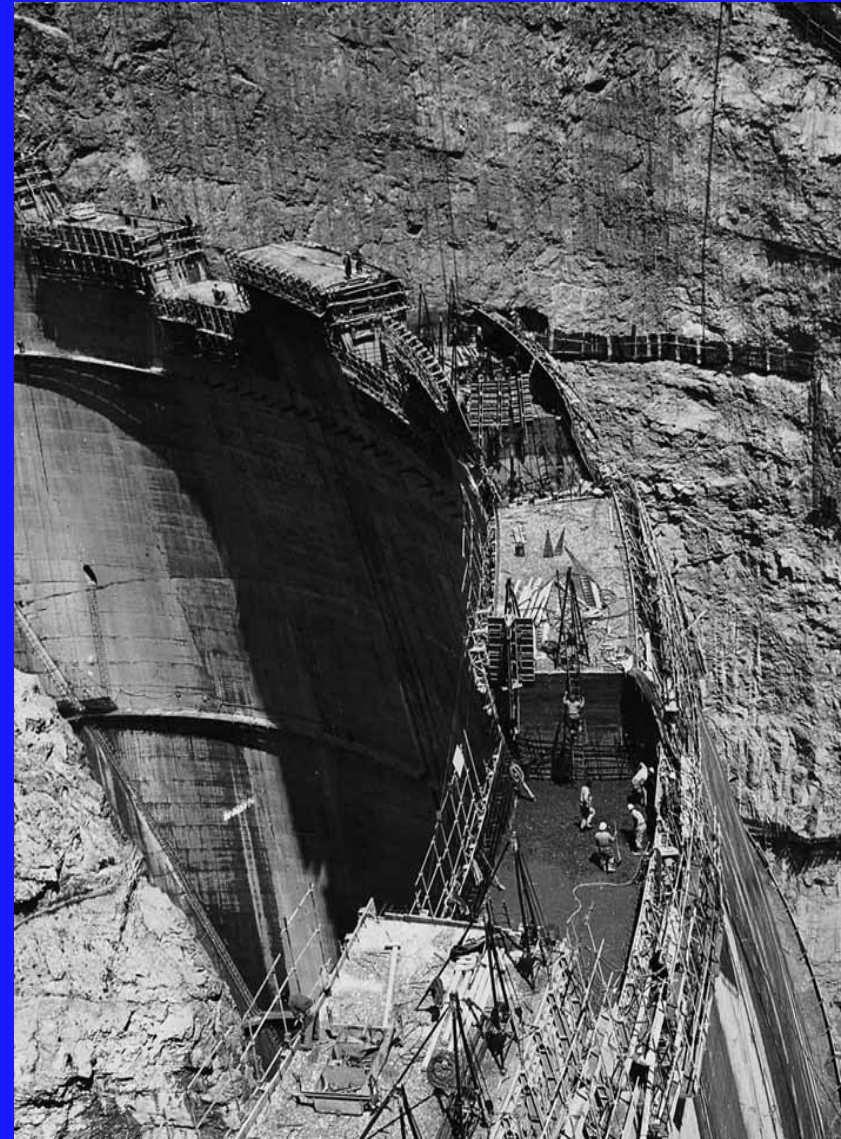
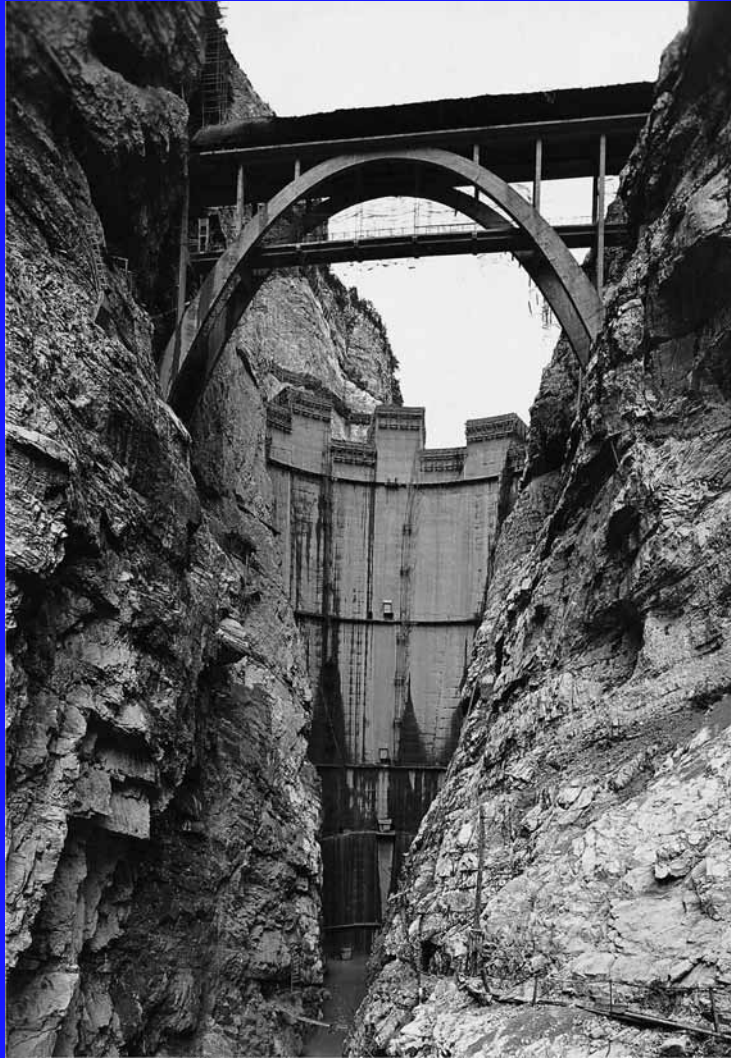


The Vajont Dam Disaster

TECHNICAL DATA OF THE DAM

<i>Beginning of construction</i>	<i>January 1957</i>
<i>End of construction</i>	<i>September 1959</i>
<i>Excavated rock</i>	<i>400.000 m³</i>
<i>Used concrete</i>	<i>360.000 m³</i>
<i>Height of the dam</i>	<i>261.60 m</i>
<i>Thickness at the base</i>	<i>22.11 m</i>
<i>Thickness at the top</i>	<i>3.40 m</i>
<i>Total water storaged</i>	<i>168 million m³</i>
<i>Useful water capacity</i>	<i>150 million m³</i>







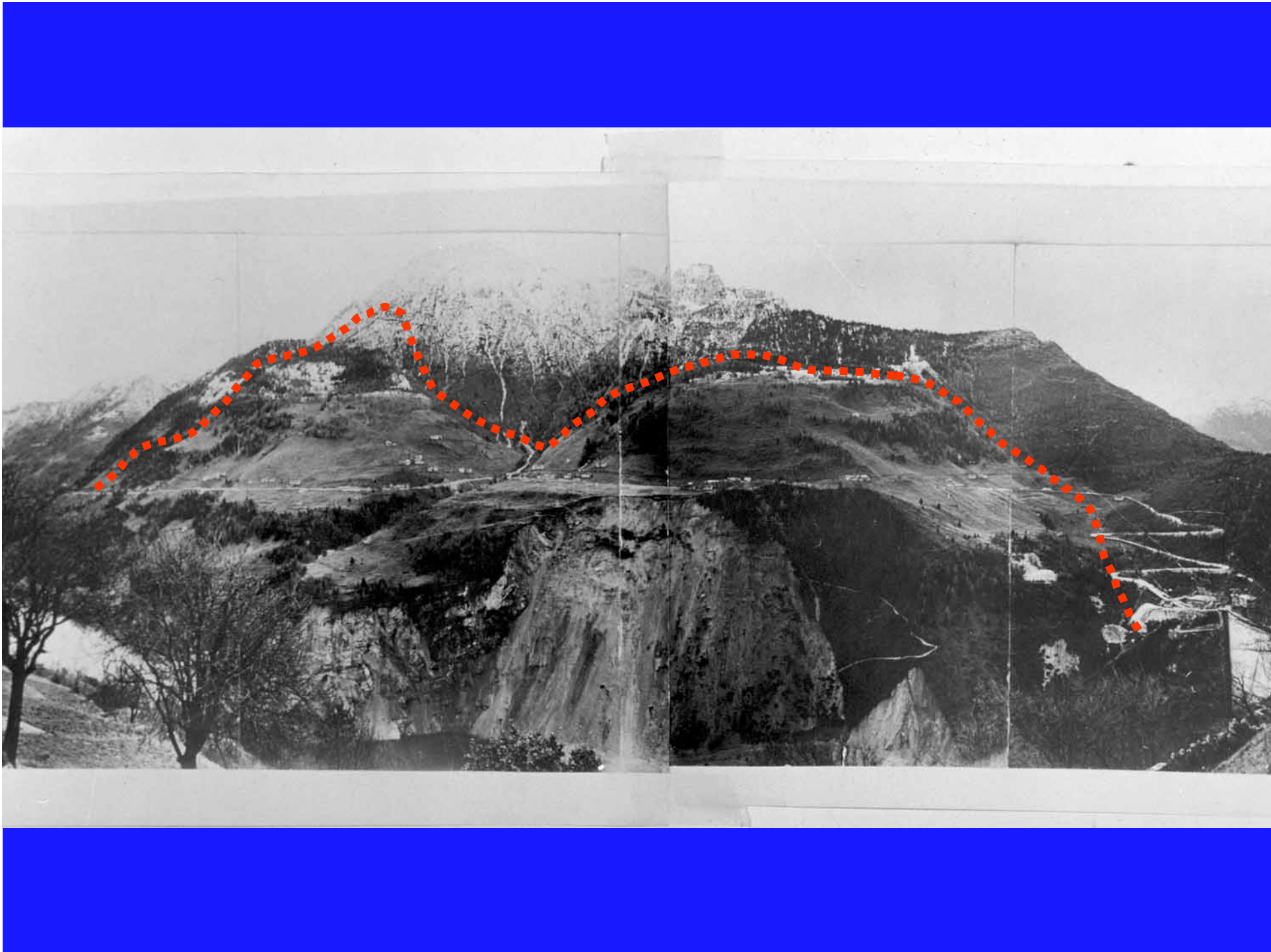
Geological studies for the construction of a 200 m high dam had started in the late 1920s. After World War II, the project was modified and the construction of the dam was eventually completed in 1959. The water volume of the reservoir reached 168 million m³.

Mt. Toc and the southern slope of the Vajont valley **were more prone to instability than expected**, since the mountain's outer flanks consisted of **an ancient landslide** deposit and not of bedrock, as initially inferred.



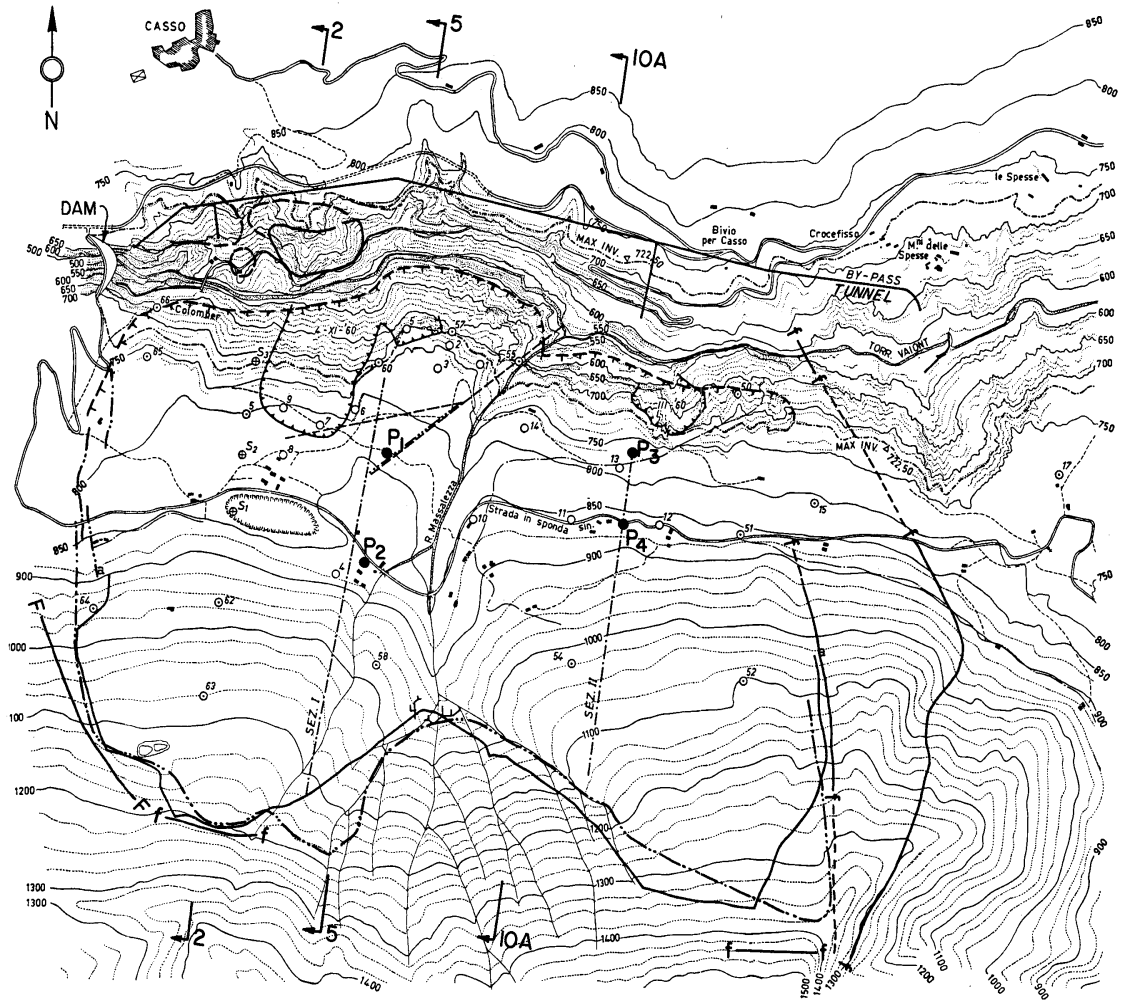
After the reservoir level had been raised and lowered several times, **the southern margin of Mt. Toc** became eventually destabilised and, after nearly three years of intermittent creeping, it **catastrophically collapsed at 22:39 hours on 9th October 1963.**

Within **30-40 seconds**, some **270 million m³ of rock** crashed into the reservoir, expelling a wave of water about **100-150 m high** over the dam



LEGEND

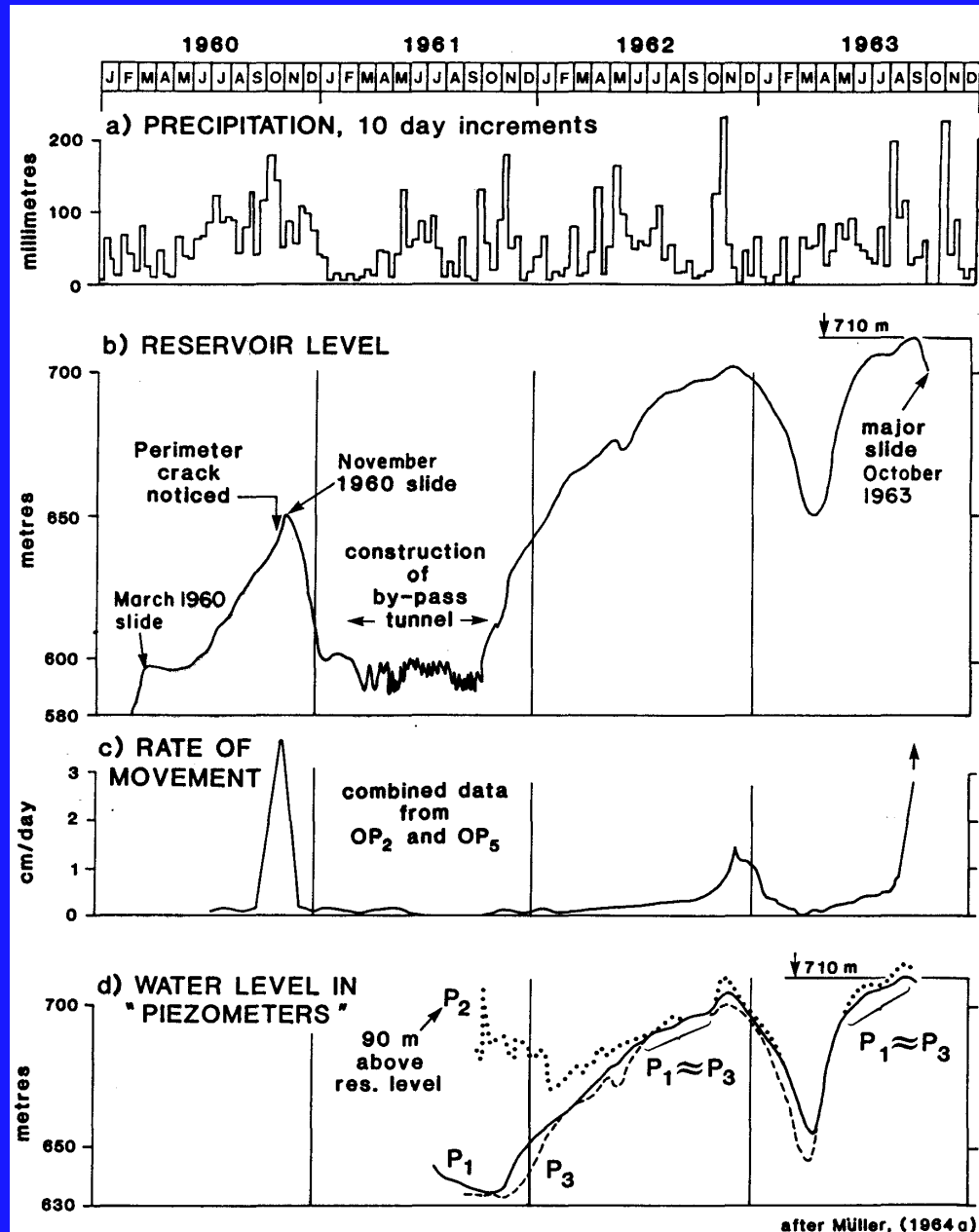
- ⁹ Control points installed before Nov. 1960
- ⁵ Control points installed during Nov. 1960
- |— Location of sections, this report
- Location of other sections
- _{S1} Drillholes made in 1959 - 1960
- _{P2} Drillholes made in 1961 (piezometers)
- └ Exploration adits near Massalezza ditch
- - - Seismic traverse of Nov. 1959
- · - Seismic traverse of Nov. 1960
- · - Seismic traverse of Feb. 1961
- ⤿ Principal slides prior to Oct. 9, 1963
- ⤿ Fissures developed by Nov. 4, 1960
- ⤿^a After Selli and Trevisan (1964)
- ⤿ After Rossi and Semenza (1965a)
- ⤿ Remains of pre-historic slide, right bank Giudici and Semenza (1960)
- ⤿ Outcrop of slip surface of pre-historic slide, Giudici and Semenza (1960)
- ┆—┆ Faults Rossi and Semenza (1965a)
- F—F Faults Carloni and Mazzanti (1964)



(after Selli and Trevisan, 1964)

SCALE 1:12,500
m 0 250 500

The Vajont Dam Disaster

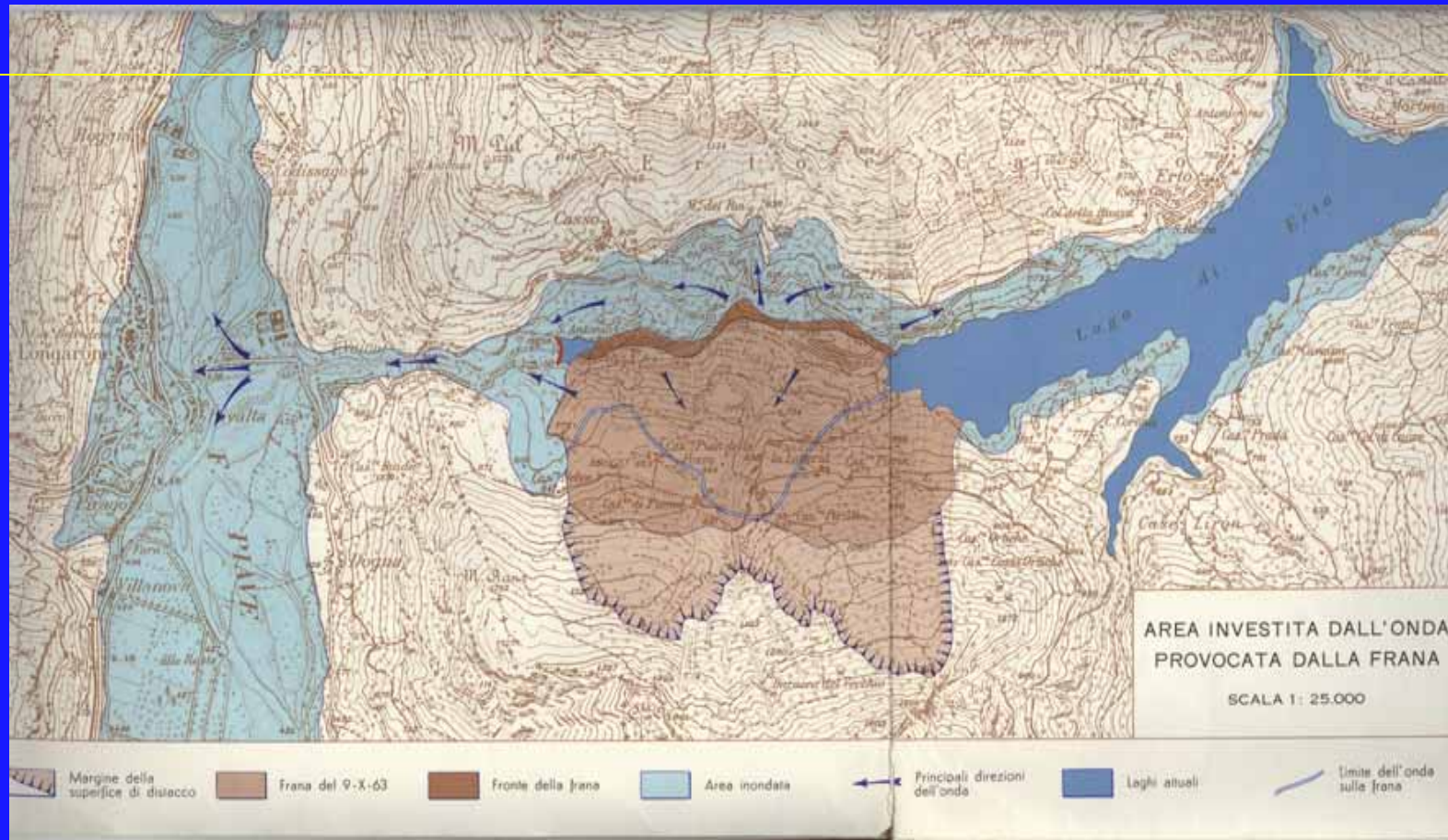


The Vajont Dam Disaster

TECHNICAL DATA OF THE SLIDE

<i>Length</i>	<i>500-800 m</i>
<i>Width</i>	<i>About 2 km</i>
<i>Depth</i>	<i>250-300 m</i>
<i>Max displacement</i>	<i>450 m</i>
<i>Volume</i>	<i>270 million m³</i>
<i>Speed</i>	<i>about 25 m/s</i>
<i>Volume of displaced water</i>	<i>50 million m³</i>
<i>Hight of water wave</i>	<i>250 m</i>

The **slide filled the valley** and the reservoir **causing a wave of water** propagating both upstream and downstream. This wave reached a maximum elevation of 935 m (235 m above the reservoir level). It swept across the dam and the Vajont gorge and eventually fell onto the Piave valley floor, where it **destroyed the town of Longarone** and neighbouring villages, claiming **1909 lives**.





Longarone prima



1910 victims

772 destroyed Families

7 villages completely destroyed

e dopo il 9/10/1963





The Vajont Dam Disaster









Vajont landslide nowadays



Thank you for your kind attention

