Italiano

Second Floor
The open-pit mine

The transition from the underground to the open-pit mine (in the second half of the 50s) is explained by a large photographic panel entitled "The open-pit excavation of wood coal 1956-1994" showing some pictures of the new extraction technique characterized by a strong mechanization with machines of enormous size. Inside a touch screen allows some insights on the machines, the production cycle and the power plant.

I) THE OPEN-PIT MINE PROJECT

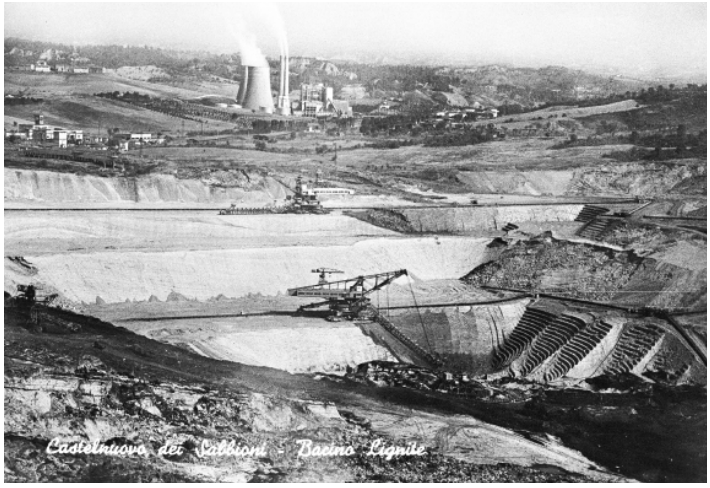
In 1954 the Valdarno Mining Company presented the Santa Barbara project, based on the open-pit excavation system, to the Government, which approved it the following year and subsidised it with considerable funding. The project, designed by the German engineer Otto Gold, was based on a strong mechanization of the cultivation process and the on-site use of wood coal in a new power plant. The project was detrimental in terms of employment, as it involved significant cuts to workforce, as pointed out by Priamo Bigiandi. Between 1955 and 1958 the mining Company prepared for the works buying colossal excavation machines. At the same time, the new power plant was built, it started producing power in 1958 .

II) TECHNOLOGY AND EQUIPMENT

The cultivation would begin with the uncovering of the barren soil that covered the bench. Two Krupp excavators were employed for the job, known as Betta I and II (from the diminutive of Gold's daughter, Elizabeth). The machines would deposit the barren soil on the conveyor belt directed to the landfill. Two Orestein & Koppel excavators were employed in the excavation of wood coal (See picture on the back). The wood coal was transported with conveyor belts to the thermal power plant and stored in a deposit called the bunker. During transport it was riddled to remove the iron slag then crushed to make it reach the bunker reduced in weight. From the bunker the wood coal would be moved into silos with a spreader and from the silos, through another conveyor belt, it would reach the power plant. The ash produced by the combustion of wood coal was pumped out of the station into an underground pipe directed to a small building from which, with a conveyor belt it would be transported to the landfill.

III) THE ORGANIZATION OF WORK

The organization of work was based on individual units called "digging site": the necessary personnel to operate a machine, i.e. 3 employees at the excavator (an excavator operator, a ground guide that controlled the excavation front and communicated with the excavator operator and a cabin attendant who controlled the centring of the exhaust from the digging machine to the grasshopper and/or conveyor belt). In addition, there were 2 employees at the conveyor belts, 2 at the spreader, 1 department head. The number of employees per shift, should have been multiplied by 3 lines of work for the barren and 1 line of work for the wood coal. The work inside the mine was organized into three shifts (8 am-4 pm, 4 pm-12pm, 12 pm-8 am) plus a reserve shift. Usually, the number of people working at any given time was 120-130 per shift. In addition to the miners, maintenance staff was employed: mechanical and electrical. At Poggio al Vento, in the headquarters, there were civil works and construction, site logistics, procurement and permits, land-use planning, heritage and topographic controls clerks.



To learn more

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