ASSOLOMBARDA
Confindustria Milano Monza e Brianza

Centrale di Fraele
Percorsi interpretativi tra conservazione dell'archeologia industriale e paesaggio idroelettrico

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This study originates from the disused power plant of Fraele, in the northernmost valley of the Italian Lombardy region, and is meant as a premise to the conservation and active protection of hydroelectric industrial heritage in less dynamic contexts such as the peripheral alpine areas. The change in perspective from the study of industrial archaeology to the acknowledgement of industrial heritage widens the scope of historical infrastructure preservation from a focus on the power plant building, often understandably justified in reference to its peculiar architectural features, to an understanding of both the complexity of the hydroelectric facility as a whole and the history of the construction works, which had a lasting impact on the alpine territories and landscapes. The research aims at investigating the evidential values attached to hydroelectric industrial heritage and the different means of identifying and communicating these values. Different aspects of the design and construction of a hydro-power facility are taken into consideration, leading to the wider notion of a “hydroelectric landscape”.

Infrastructure is the result of a careful analysis of the resources and morphology of a territory. During the first decades of hydroelectric development different areas of polytechnic know- ledge were integrated for the first time into large scale designs, making use of interdisciplinary competencies and taking advantage of the wide-ranging preparation of the engineering schools. The education of the virtual figure of a “hydroelectric designer”, in fact a team of engineers, within the Royal Technical Institute of Milano is described through its study programs and the specific technical literature available, revealing the attention to international developments and the influence of European technical cultures on Italian mechanical, hydraulic and later hydroelectric practice at the turn of the century.

A hydroelectric facility can be read at multiple levels. The territorial level emphasises the historical and geographical specificity of hydroelectric developments, contextualising the infrastructural works in the wider alpine region. The technical dimension shows the strict relation of the design process with the local morphological, hydrographic and territorial characteristics, and the strong interdependency in the design of each part of the hydroelectric system, including the major works, the dam and the power plant. This is further clarified by the power station de- sign criteria, which are always dependent on the external factors, the choices made on the overall

layout of the facility, and the internal factors, namely the requisites of machinery and technical systems. While its technological content may qualify the building as a “technical monument”, the power plant is often designed with strong architectural features, often brought at the forefront as the main object of preservation goals. The search for a suitable language for industrial buildings that openly confronted the landscape does not seem to have been openly developed in the Italian designs, which are more attentive to the self-representation needs of the electric industry. It was strongly felt in the German and Swiss architectural discourse, also affecting the design of power plants.

The case study takes advantage of the technical documentation, the company records and the photographic heritage of the former Municipal Electrical Company of Milano, AEM, to complement the available literature, focused on the economic and institutional history of the company, with a narration of the technical management of the earliest infrastructural works. The elements of the historical infrastructure are made clear, especially in regard to its configuration on completion of the first phase of development up to 1930. The results aid the assessment of the material integrity of the heritage, but also reveal the continuous process of accumulation of expertise and the structuring of the construction management process over an uninterrupted series of works, culminating in the great Cancano reservoir. More detailed documentation allows to trace the interplay between the technical and architectural design in the making of the power plant building, revealing the otherwise invisible peculiarities of the construction.

The facility design comes from the accurate survey of natural features and resources, but its implementation modifies and imposes its own new rules, turning former rural and high altitude landscapes into industrially productive territories. A hydroelectric development defines a form of “industrial landscape”, the meaning of which needs to be clarified. Industrial landscape may refer to the practice of landscape identification and the significance that is given today to the developments, while it may or may not refer to a conscious process of landscape making during the design and building process. The distinction is exemplified by the reception of the hydroelectric industry by the German and Swiss Heimatschutz movements, showing a more open concern with landscape integration than the Italian case. In the Valtellina context, the identification of a “hydroelectric landscape” does not mean acknowledging an already established historical landscape of hydroelectricity, as much as contributing to the integration of historical infrastructure in the perception of the alpine landscape today. An apparently minor heritage, still fundamental for the hydraulic regulation and of great importance for both the technological and institutional history and for the shaping of the landscape, is at the centre of some initiatives in the Ruhr region, exemplifying the reappropriation of historical water infrastructure and its integration in the contemporary landscape. In this perspective, actions for the communication of the cultural significance of the remains of unused infrastructure contribute to the identification of a new role for hydroelectric heritage.