

## Research on the Environmental Assessment Index of Brownfield Redevelopment in Taiwan: A Case Study on Formosa Chemicals and Fibre Corporation, Changhua Branch

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**Abstract :** The concept of "Brownfield" has been developed for nearly 35 years since it was put forward in the Comprehensive Environmental Response, Compensation, and Liability Act, CERCLA of USA in 1980 for solving the problem of soil contamination of those old industrial lands, and later, many countries have put forward relevant policies and researches continuously. But the related concept in Taiwan, a country that has developed its industry for 60 years, is still in its infancy. This leads to the slow development of Brownfield related research and policy in Taiwan. When it comes to build the foundation of Brownfield development, we have to depend on the related experience and research of other countries. There are four aspects about Brownfield: 1. Contaminated Land; 2. Derelict Land; 3. Vacant Land; 4. Previously Development Land. This study will focus on and deeply investigate the Vacant land and contaminated land. The subject of this study is Formosa Chemicals & Fibre Corporation, Changhua branch in Taiwan. It has been operating for nearly 50 years and contributing a lot to the local economy. But under the influence of the toxic waste and sewage which was drained regularly or occasionally out from the factory, the environment has been destroyed seriously. There are three factors of pollution: 1. environmental toxicants, carbon disulfide, released from producing processes and volatile gases which is hard to monitor; 2. Waste and exhaust gas leakage caused by outdated equipment; 3. the wastewater discharge has seriously damaged the ecological environment of the Dadu river estuary. Because of all these bad influences, the factory has been closed nowadays and moved to other places to spare the opportunities for the contaminated lands to re-develop. So we collect information about related Brownfield management experience and policies in different countries as background information to investigate the current Taiwanese Brownfield redevelopment issues and built the environmental assessment framework for it. We hope that we can set the environmental assessment indexes for Formosa Chemicals & Fibre Corporation, Changhua branch according to the framework. By investigating the theory and environmental pollution factors, we will carry out deep analysis and expert questionnaire to set those indexes and prove a sample in Taiwan for Brownfield redevelopment and remediation in the future.

**Keywords :** brownfield, industrial land, redevelopment, assessment index

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