

Sustainable Economic Development:
The Case of Implementing Industrial Ecology

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Submitted to the Department of Urban Studies and Planning on May 17, 2001 in Partial
Fulfillment of the Requirements for the Degree of

Master in City Planning

at the

Massachusetts Institute of Technology

Abstract

Industrial ecology (IE) is an emerging paradigm for environmental control. IE offers a framework for altering industrial activities so that they more closely reflect a closed loop cycle, rather than a linear flow of extraction and disposal.

Implementation of IE is occurring through the eco-industrial park (EIP) model. An EIP is a group of businesses that are implementing IE principles, through cooperation between one another and/or other organizations.

This Thesis examines the current practice of implementing IE through the EIP model. The research methodology includes assessing the Kalundborg, Denmark EIP example, surveying North American EIPs, and studying a case of implementing an EIP in Londonderry, NH.

Findings from the research indicate that there is currently a taxonomy of IE practices being implemented through the EIP model. The taxonomy includes practice in land stewardship, green building design, individual firm environmental practices, and byproduct exchange. Each of the four areas of practice have characteristics with implications for how implementation should occur through an EIP.

EIP planners and developers should craft implementation strategies in accordance with their IE objectives. Additionally, the management entity of an EIP should have the capacity to implement all IE objects. Finally, a community education process on IE is necessary during the implementation of an EIP.