



Fig - 0.2
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PREFACE

The 20th century was characterised by a rapid technological development. An industrial economy lasted for 250 years and has been superseded by a service economy which is expected to last for about 60 - 80 years. After this, the knowledge economy will take over, which will last for no more than 50 years before an economy based on bio-sciences will replace it (Jenkin & Worthington, 1996, p. 85).

Economies last for shorter periods of time as technology forms the driver for change and as technologies progress at an exponential rate, so do the economies surrounding it. Mass production has been replaced with miniaturisation or clever production of goods and industrial production no longer needs the spatial requirements or production lines it used to (Kellenberger, 2007, p. 5). This has caused a mass exodus from industrial production areas with the change of economy and resulted in deserted urban landscapes fortifying urban centres.

“Industrial spaces are mentally exterior in the physical interior of the city”

(Curulli, 2006, p. 32)

The industrial architecture that remains is a collection of static, mono-functional, disconnected edifices designed as flexible containers that never transcended the change of economy or context and after periods of extreme use bear witness to human progression (Curulli, 2006, p. 36).

Deserted industrial sites suffer from not only a physical but also a *perceived* state of environmental problems due to their lack of physical fertility. Most of the deserted industrial sites have existing infrastructures, are well connected to transport and are well positioned in relation to the business sector, but are overlooked

by local developers due to the stigma associated with post industrial sites and processes (Burke, [2002], p. 1).

Irene Curulli describes industrial wastelands as absent from the city’s circuit and productive structure and places which are foreign to the urban system (2006, p. 36). With the desertion of industrial areas (damaged by human activity) massive sites have become available for urban growth. The size and scale of these sites offer numerous avenues for urban development and its lack of function offers the designer carte blanche for experimentation.

Industrial development is not something of the past, especially in developing countries such as South Africa. The only difference now is that the nature of industry has changed and therefore the architectural typology to house it requires a drastic change to limit the ills of the past. With the change of industrial typology comes the opportunity to address the spatial, environmental and social problems of industrial architecture.

The dissertation investigates an interface between industrial architecture, the public realm and formal and informal programmatic functions mediated through an urban abattoir. Further, the dissertation examines the occupation of a deserted industrial site and revival thereof through new light industrial programming.

The proposal focusses on the rejuvenation of the abattoir as a ritualistic and cognisant process and the contemporary application of the industrial typology mediated through regenerative architectural principles and sustainable technologies.

A new public interface is explored to reconnect industrial architecture and industry to the “*urban surface*”, avoiding the mis-

takes of the past and preserving the future of the site and its surrounding context.

The final design ameliorates the deserted wasteland condition by connecting the new abattoir to the industrial heritage of the site. The resultant design is an urban abattoir which interacts and expresses itself at various scales whilst always representative of the processes housed. The design creates a dialogue be-

tween the public and the abattoir by adopting the methodology of reclaiming the entire animal carcass as done in South African ritual slaughter. The design incorporates numerous sustainable systems to reduce the waste found in abattoirs.

The project reconnects the contemporary abattoir to the productive urban network and emphasises the importance of architecture in the regeneration of a building typology.



Figure - 0.3 - Industrial Wasteland in Duisburg Nord - (Curulli, 2006, p.38)

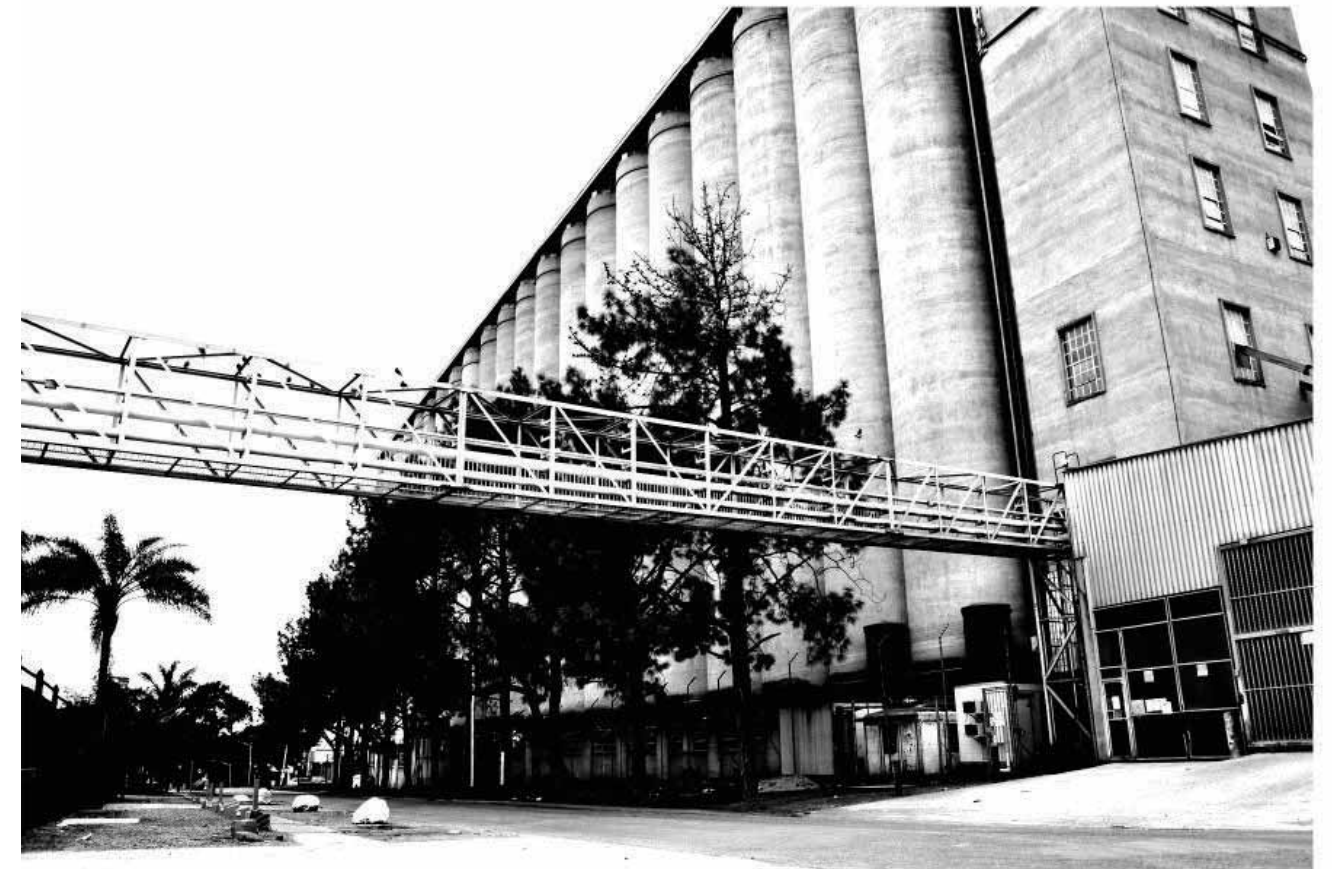


Figure - 0.4 - Abandoned Industrial space in Pretoria West. (By Author)

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Fig - 1.1
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INTRODUCTION

Problem Statement

The Problem:

Industrial and urban development has and continues to develop on opposite poles of the city, (*Industrial development referring to areas of production and urban development referring to commercial and residential development*). This is causing industrial wastelands to become even more disconnected from the urban network, making industrial wastelands black holes in the mental maps of urban areas (Curulli, 2006, p. 38).

The architecture of industrial typology transformed to the architecture of economy during industrialisation in the late 19th century due to the speed of erection and flexibility it required and materialised as large sheds with no formal expression of processes housed. The industrial typology has therefore never been regarded as an architecture that contributed much to architectural history and was and still is regarded as somewhat of an engineering exercise (Winter, 1970, p. 7).

The Question:

How should new industrial development on deserted industrial brownfield sites be combined with new urban development initiatives to explore the relationship between industrial praxis and the public realm?

Hypothesis:

With the recent shift to a sustainable paradigm, the inherent spatial, environmental and social problems of the industrial typology can be addressed by firstly solving the tri-pollution factor

(air, noise and light pollution) through new architectural technologies and environmentally conscious design. If/when these factors are solved, the building can become a more accessible architectural vehicle to address its immediate surroundings and reconnect to the productive urban network and the surrounding context.

A new typology can be formulated to integrate areas of production into areas of commerce and living, to create urban areas of diverse programmes which can reach equilibrium of complementary energy production and public concession.

Sub Problems:

What are the regenerative possibilities of new industrial development?

Can an architecture of production happen in a peri-urban context and enter a dialogue of constructive engagement with the public?

How can areas of large scale production create a humanised work environment?

How can new industrial development respond to or interact with existing heritage?

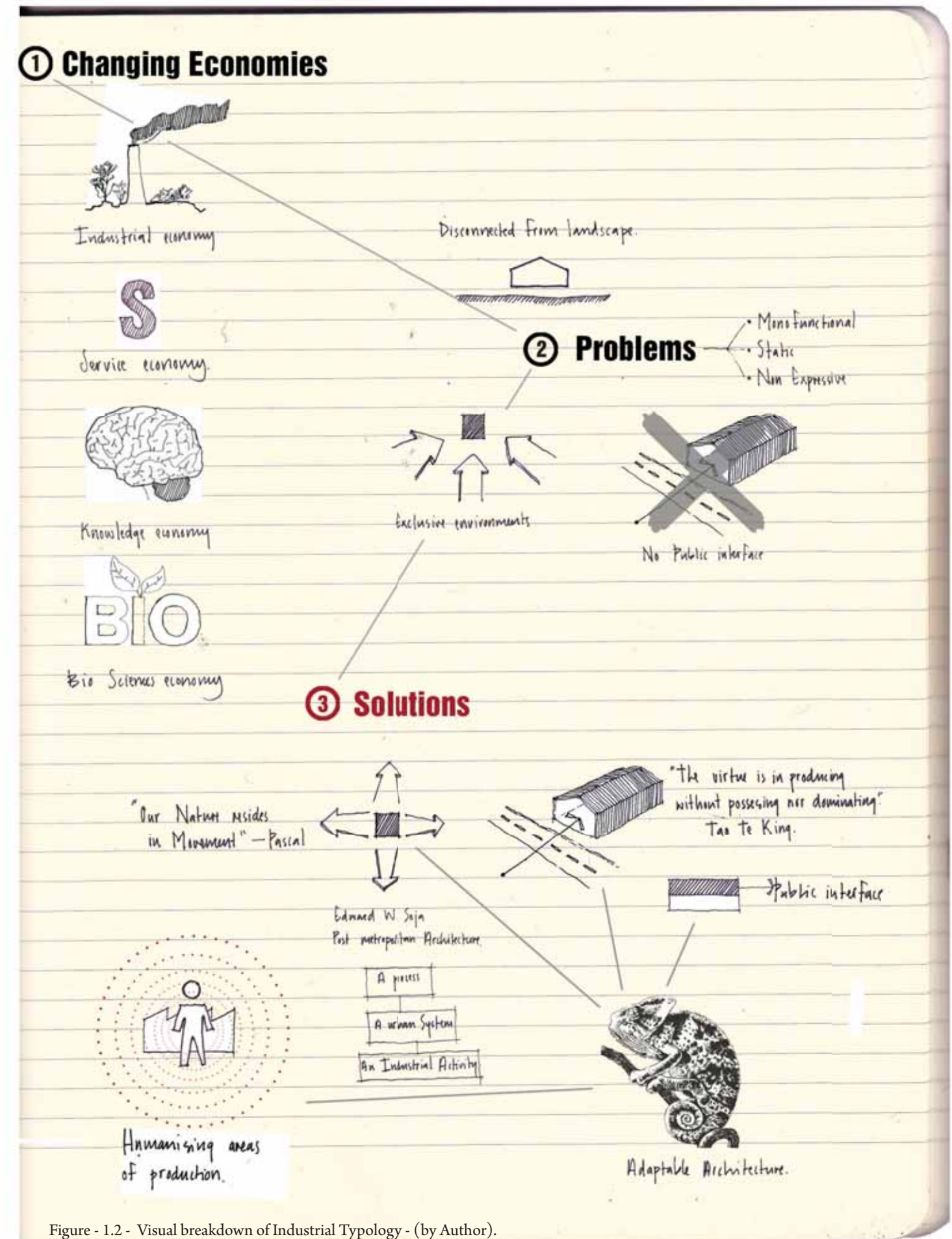


Figure - 1.2 - Visual breakdown of Industrial Typology - (by Author).

Objective

The objective of this dissertation is to investigate the spatial potential of urban industrial wastelands by using sustainable design principles in the design of places of production. By liberating industrial areas or areas of production from contamination and reconnecting them to the urban network, a new public interface between the industrial typology and the public realm can be investigated within the context of the Third Industrial Revolution.

Further, the dissertation will explore the temporal nature of industrial buildings to facilitate changing economies and contexts so that the architecture is not rendered useless as its function becomes obsolete. This will be done by designing a building within a new urban development initiative in Mamelodi, situated in the eastern precinct of the City of Tshwane, where the building will facilitate the growth of the new framework. The design will then have to adapt to the changing context of production to accommodate the context of the proposed high street development.

The chosen programme is an abattoir and meat market. The dissertation aims to rejuvenate the abattoir as a cognisant, ritualistic social intervention. The design of the abattoir aims to realign the processes of slaughter with notions of ritual sacrifice and ceremony in the context of Mamelodi.

Up until the late Nineteenth-Century, sacrifice and consumption were inseparable (Rifkin, 1992, p. 74). Today, as society continues to preoccupy itself with hygiene and censorship, this connection has been lost.

In response to this cultural ignorance the abattoir is to be reintroduced to the urban network, creating the possibility for the public to experience the full scale of human and non human emotion. Not merely experiencing the beautiful, but embracing the abrasion of the ugly.

Delimitations

The dissertation will focus on new industrial development and will not address adaptive reuse of old industrial buildings.

The abattoir will focus on the slaughter of bovine (cattle) spe-

cies only.

The flexible nature of a new typology will be explored but the dissertation will not address a programmatic change of the building.

Assumptions

The GAPP framework proposal 2011 will be used as the basis for the development framework in and around Eerste Fabriek Station in Mamelodi.

It is assumed that the existing cattle farm at the Eerste Fabriek precinct in Mamelodi can be moved across the river west of its current location.

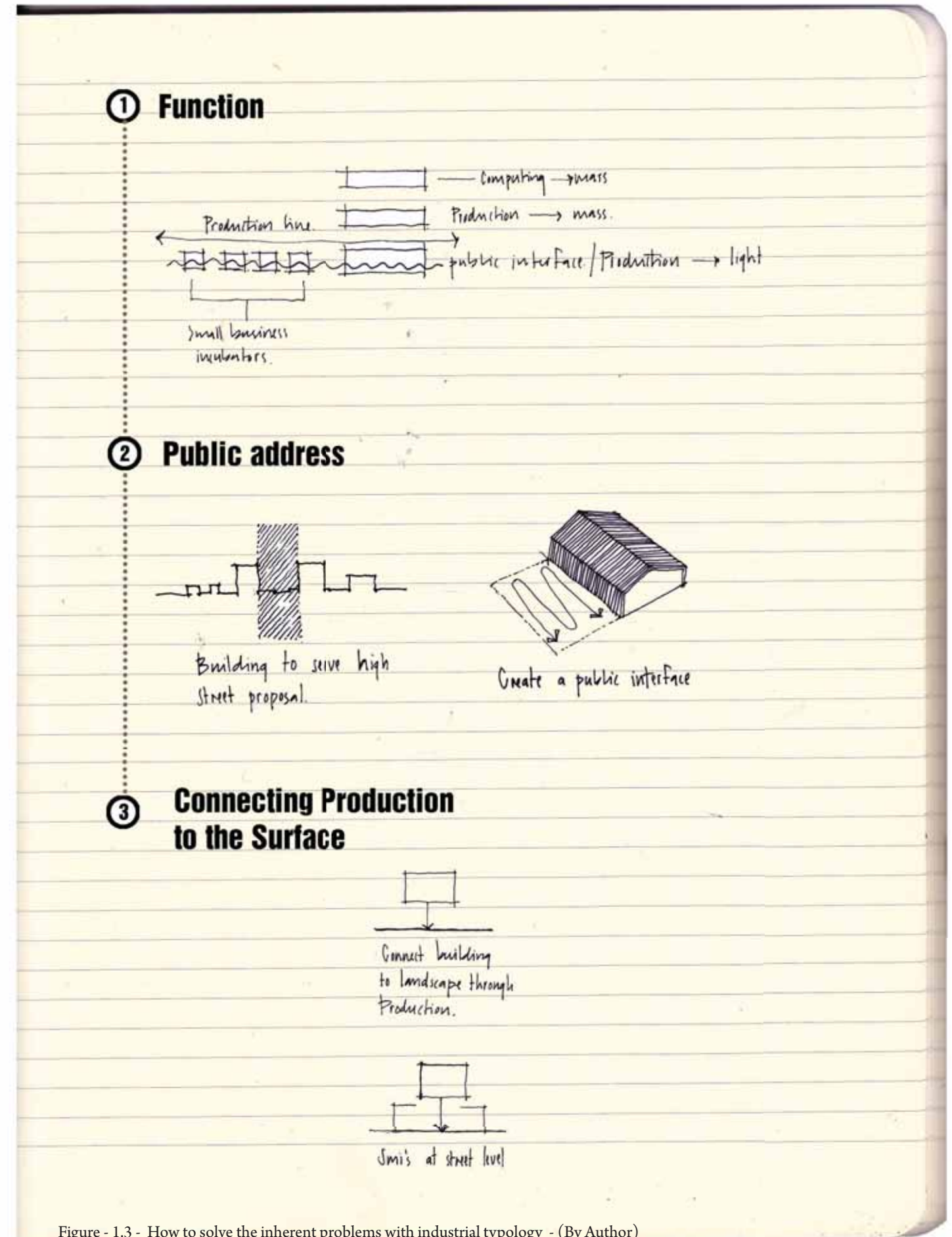


Figure - 1.3 - How to solve the inherent problems with industrial typology - (By Author)