

ACHARYA'S NRV SCHOOL OF ARCHITECTURE

SOLDEVANAHALLI, BENGALURU -560 107

"METAMORPHOSIS OF INDUSTRIAL HERITAGE" ARCHITECTURE DESIGN PROJECT (THESIS) – 2021

In Partial Fulfilment of the Requirements for the

"Bachelor of Architecture" Degree Course

Submitted by USN Guide : Aayushi Upadhyay : 1AA17AT002 : Ar. Shilpa Raj

A project report submitted to :

VISVESHWARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama", Machhe, Belgaum – 590 018

ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ - ೫೯೦೦೧೮



CERTIFICATE

This is to certify that this thesis report titled "Metamorphosis of

Industrial Heritage" by Aayushi Upadhyay of IX SEMESTER B. Arch,

USN No. 1AA17AT002, has been submitted in partial fulfillment of the

requirements for the award of under graduate degree Bachelor of

Architecture (B.Arch) by Visveshwaraya Technological University VTU,

Belgaum during the year 2021-22.

Guide

Principal

Examined by :

1)Internal Examiner

:

:

2)External examiner 1

3)External examiner 2 :

DECLARATION

This thesis title titled **"Metamorphosis of Industrial Heritage"**, submitted in partial fulfillment of the requirement for the award of the under graduate of Bachelor of architecture is my original work to the best of my knowledge.

The sources for the various information and the data used have been duly acknowledged.

The work has not been submitted or provided to any other institution/ organization for any diploma/degree or any other purpose.

I take full responsibility for the content in this report and in the event of any conflict or dispute if any, hereby indemnify Acharya NRV School of Architecture and Visveshwaraya Technological University, Belagavi and its official representatives against any damages that any raise thereof.

AAYUSHI UPADHYAY

1AA17AT002

ACKNOWLEDGEMENT

First and foremost, I have to thank my parents for their love and support throughout. Thank you both for giving me strength to reach for the stars and chase my dreams.

I would like to express my sincere gratitude to my thesis guide Ar. Shilpa Raj for her invaluable support and guidance throughout the research and design process. I would also like to thank all the faculty members at Acharya's NRV school for Architecture for their constant advice and guidance, I'm indebted to their counsel and efforts .

I'm grateful to Mr. Anand D Mulay, Senior Inspector of Police, Kalachowki Police Station, and Mumbai police for their assistance and cooperation during the site analysis.

I am appreciative of the team at Alembic City Art District in Vadodara and Godrej Properties, Mumbai for their constant support during the case studies.

This work would not have been possible without the constant support of my friends Madhuparna, Moulya, Karthik and Nikhil.

TABLE OF CONTENTS

LIST OF TABLES

- Table 1 Area statement (National museum)
- Table 2 Activity Analysis (National museum)
- Table 3 Structural Analysis and heritage significance
- Table 4 Area Statement

LIST OF FIGURES

- Fig 2.1– Industries and its role in society
- Fig 2.2 Process of utilization
- Fig 2.3 Example- Ambler's House
- Fig 2.4 Adaptive Reuse Form
- Fig 2.5 Six strategies for transformation of existing buildings
- Fig 2.6 Relevant massing diagrams of precedents
- Fig 2.7 Drivers and Barriers of an adaptive reuse project
- Fig 2.8 Zoning diagram
- Fig 2.9 Circulation
- Fig 2.10 Gallery Circulation Diagram
- Fig 2.11 Exhibit in display
- Fig 2.12 Creation of adaptation paths
- Fig 2.13 Utilise the specific characteristics of visual perception
- Fig 2.14 Design based on the dark room
- Fig 2.15 Concentrate on vertical lighting
- Fig 2.16 Services
- Fig 3.1.1 Stedelijk Museum New building
- Fig 3.1.2 Museum Masterplan and Context
- Fig 3.1.3 New entrance towards Museumplein
- Fig 3.1.4 Stedelijk Museum Basement Plan

- Fig 3.1.5 Stedelijk Museum Ground Plan
- Fig 3.1.6 Stedelijk Museum Second Floor Plan
- Fig 3.1.7 Stedelijk Museum Cross Section
- Fig 3.1.8 Stedelijk Museum Section
- Fig 3.1.9 Stedelijk Museum Longitudinal Section
- Fig 3.1.10 Stedelijk Museum Elevations
- Fig 3.1.11 Stedelijk Museum Elevations
- Fig 3.1.12 Stedelijk Museum Framework
- Fig 3.1.13 Stedelijk Museum New structure
- Fig 3.1.14 Stedelijk Museum –"The tube"
- Fig 3.1.15 Stedelijk Museum "Bath tub"
- Fig 3.1.16 Stedelijk Museum "White interiors"
- Fig 3.2.1 Hughes Warehouse
- Fig 3.2.2 Hughes Warehouse Context
- Fig 3.2.3 Hughes Warehouse
- Fig 3.2.4 Hughes Warehouse- Plan
- Fig 3.2.5 Hughes Warehouse- Facade
- Fig 3.2.6 Hughes Warehouse- Drawings
- Fig 3.2.7 Materials & Construction
- Fig 3.2.8 Energy Flows
- Fig 3.2.9 Daylight autonomy & Indoor air quality
- Fig 3.2.10 Hughes Warehouse Interiors
- Fig 3.2.11 Hughes Warehouse Interiors
- Fig 3.2.12 Hughes Warehouse -Curtain wall
- Fig 3.2.13 Hughes Warehouse Conference Rooms
- Fig 3.2.14 Hughes Warehouse Courtyard
- Fig 3.2.15 Hughes Warehouse West Facade
- Fig 3.2.16 Hughes Warehouse Flexible Office Space
- Fig 3.3.1 Exhibition Space and Museum

- Fig 3.3.2 Alembic Heritage Master Plan
- Fig 3.3.3 Alembic Heritage Landscape
- Fig 3.3.4 Alembic Heritage View
- Fig 3.3.5 Alembic Heritage Re-development Sectional View
- Fig 3.3.6 Alembic factory before redevelopment
- Fig 3.3.7 Alembic factory after redevelopment
- Fig 3.3.8 Corridor Lintel detail at "A"
- Fig 3.3.9 Alembic Factory before Redevelopment
- Fig 3.3.10 Alembic Museum Elevations
- Fig 3.3.11 Alembic museum & Studio Sections
- Fig 3.3.12– Alembic museum Roof detail
- Fig 3.3.13 Alembic Museum Roof
- Fig 3.3.14 Refurbished Truss (Studio)
- Fig 3.3.15– Alembic museum materials
- Fig 3.3.16– Central Open Space
- Fig 3.3.17– Exhibition Space
- Fig 3.4.1– Imagine Studio
- Fig 3.4.2– Imagine Studio Site & Context
- Fig 3.4.3–Site Plan
- Fig 3.4.4–Site Section CC'
- Fig 3.4.5– Studio Section
- Fig 3.4.6– Studio Elevation
- Fig 3.4.7– Exterior Transformation
- Fig 3.4.8- Cogeneration plant 1 Interiors
- Fig 3.4.9–Interiors after transformation
- Fig 3.4.10–Studio transformation
- Fig 3.4.11 Reused Perforated Louvers
- Fig 3.4.12–Studio Interiors
- Fig 3.4.13 Studio Exterior View

- Fig 3.4.14 Workshop Plan
- Fig 3.4.15 Workshop Section
- Fig 3.4.16 Workshop Façade transformation
- Fig 3.4.17 Workshop Interiors
- Fig 3.4.18 Materials (workshop & studio)
- Fig 3.4.19 Café Plan & Elevation
- Fig 3.4.20 Café Section
- Fig 3.4.21–Boiler room café
- Fig 3.4.22- Imagine studio -Silos
- Fig 3.5.1- Museum Context
- Fig 3.5.2- Museum Concept
- Fig 3.5.3- Master Plan
- Fig 3.5.4- Circulation
- Fig 3.5.5- Floor Plans
- Fig 3.5.6-Ground Floor Functions
- Fig 3.5.7- Exhibition Space
- Fig 3.5.8- Museum Front Elevation
- Fig 3.5.9- Central Courtyard
- Fig 3.5.10 Museum Interiors
- Fig 4.2.1–Girangaon Location
- Fig 4.2.2–Girangaon over the years
- Fig 4.3.1–Kohinoor Mills in 1918
- Fig 4.3.2(i)–Type 1- Saw tooth Structure
- Fig 4.3.2(ii)–Type 2- Warehouse
- Fig 4.3.2(iii)–Type 3- Chimneys
- Fig 4.3.2(iv)–Type 4- The waterbody
- Fig 4.3.4–Map of mills across Mumbai
- Fig 4.3.5–High Street Phoenix
- Fig 4.3.6–DC Regulation 58

Fig 4.3.7–Interrelationships before and after mill shutdown

- Fig 4.4.1 India United Mills Location
- Fig 4.4.2 Nearby Locations

Fig 4.4.3 Land-use

Fig 4.4.4 Figure and Ground

Fig 4.4.5 Road network

Fig 4.4.6 Mill lands in Proximity

Fig 4.4.7 Accessibility

Fig 4.4.8 Traffic Analysis

Fig 4.4.9 Micro Analysis

Fig 4.4.10 Vegetation on Site

Fig 4.4.11 Climate Graph

Fig 4.4.12 Wind Rose diagram

Fig 4.4.13 Sun Path Diagram

Fig 4.5.1 United India mills 2&3

Fig 4.5.2 India United mill 2& 3 Existing structures plan

Fig 4.5.3 Existing Features on site

Fig 4.5.4 Existing structures plan

Fig 4.5.5 Building Characteristics

Fig 4.5.6 Brick as construction Material

Fig 4.5.7 Stucco plaster on walls

Fig 5.1 Concept

Fig 5.2 Elements

Fig 5.3 Planning Concept

Fig 5.4 Zoning