Academic & Professional portfolio

MALHAR AMBEKAR

B.Arch, Council of Architecture (COA)
(Part 2 Equivalent)
Sir J. J. College of Architecture, Mumbai, India, 2015

MA Architecture & Urbanism
Manchester School of Architecture, Manchester, UK, 2023

CONTENTS

Researcher
Natural Materials Exhibition, 2023-2024
Manchester School of Architecture, UK

Worked as Researcher for the Natural Materials Exhibition at the Manchester School of Architecture, UK.
Research involed understanding natural materials and the buildings executed with the least carbon emission.
The materials focused were tember, cork, hemp, lime, micelium, stone.

NATURAL MATERIALS NOW!

Emissions from the building industry contribute around one-third to the total global carbon footprint. With aspirations to be net zero carbon by the 2050s, we need to rapidly change construction practices. The built environment should be constructed, maintained, replaced, and renewed using natural and finite resources efficiently.

Carbon emissions in the built environment are divided between operational carbon and embodied carbon. This exhibition tackles embodied carbon reduction through asking you to reconsider the construction materials that we commonly use.

Particularly in the developed world, we are wedded to concrete, steel and glass as building materials – all of which have high embodied carbon costs. Natural (biobased) materials, which come entirely from plant-based sources, may be the antidote to our carbon intensive practices. These materials are abundant and renewable, minimally processed, easily reused and recycled (or returned) to the Earth, and are non-toxic. Using natural materials should be the future in construction.

Through choosing natural materials, we have the power to change the construction industry. This exhibition displays natural material examples to encourage you to interact with them and to inspire you towards making natural materials your first choice in your studio projects (and beyond). Most of the examples here are UK-applicable so if you go onto practice elsewhere in the world, be sure to research the locally sourced and natural materials available.

We hope you enjoy the exhibition. For further information, a more detailed list of materials resources, suppliers, and exhibition references can be found by scanning the QR code found on every board.


Demolition of a reinforced concrete frame building


Open coal mine


Cement production


Brick kiln pollution

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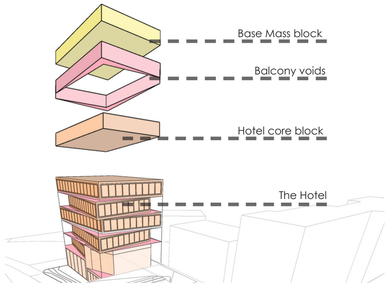
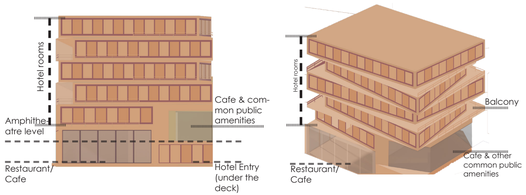
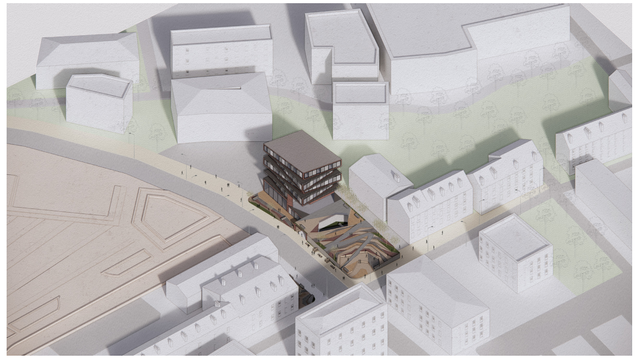
MA Architecture & Urbanism

Manchester School of Architecture, UK







Macclesfield predonminately has elderly population. Along with that, what was evidednt and also laid down as a requirement from the residents of Macclesfield was an accommodating hotel. The hotel's location was strategically selected considering projects of other group members that included cultural interventions. Along with that, the abundance of parking lots in the town was addressed by a public plaza design at the Park Green, Macclesfield.

To read more on this project in detail-Urban Intervention; Studio Project: Hotel Design and Public Spaces in Macclesfield, UK

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The hotel design intends to make a statement with its style while maintaining the material language of the town. The design of the plaza strategises on bringing a sense of engagement for the community as well as intends to be less imposing and carefully flexible at the same time. The seating arrangement are patterned in order to achieve that by means of a geometry that also allows flexible access throughout the place.

To read more on this project in detail-Urban Intervention; Studio Project: Hotel Design and Public Spaces in Macclesfield, UK

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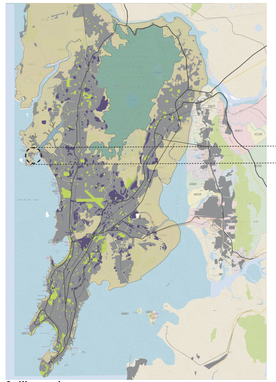
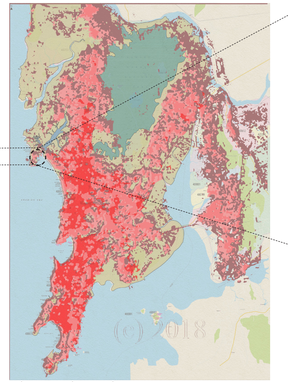
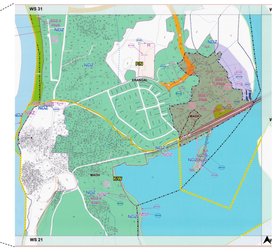


Settlements



Urban Development



Studying of the urban development over a period of time in the city of Mumbai led to an understanding of its conseuqent growth and urban sprawl. The recent amendments in the proposed developmet plan for the city drove an attention towards the selected portion and the necessity for an integrated masterplan development for the existing community and occupation.

Urban Development

Informal Settlement

Open Spaces

1970s

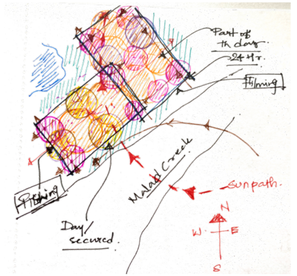
1990s

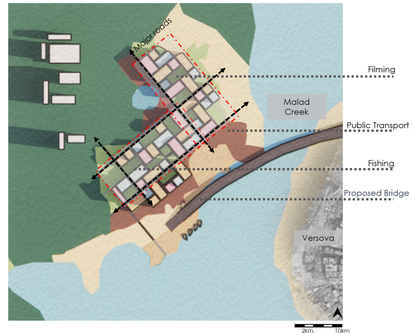
2010

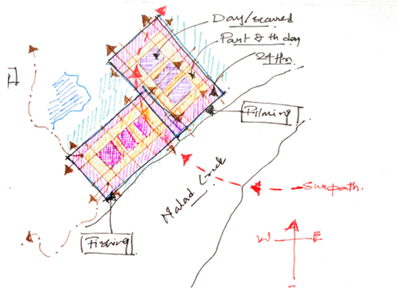
2018

To read more on this project in detail- Integrated Masterplan Development: Formalizing the informal

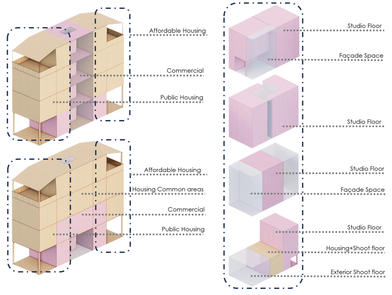
ACADEMIA







Keeping the idea of an integrated masterplan in place, the design strategised on allocating zones for the two predominant occupation of the area i.e. fishing and filming for the effeciency of the space and infrastructure. However, it conceptualised on integrating them into the built as well as unbuilt forms.



To read more on this project in detail- Integrated Masterplan Development: Formalising the informal

ACADEMIA

ACADEMIA

B.Arch (Bachelors of Architecture)
Sir J. J. College of Architecture, India

Music City, Mumbai, India

The topic primarily focused on designing a place with all the necessary areas required for music. The idea was to design a place that had areas dealing with different aspects such as learning to production of music, including the performance part of it. The goal was to bring all of these essential fragments together in one place and under one roof, eventually making it a ‘Music City’.

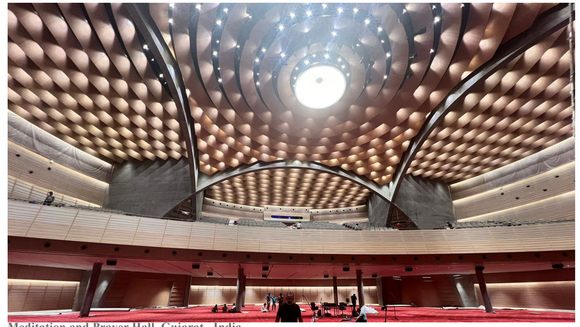
Administratvie Block at a rural coastal village

Considering a rural set-out, the idea was to design a building that would fit in within its natural surrounding and reflected an inspiration from the surrounding architecture. Zoning was primarily done keeping the requirements in mind and elements such as the central courtyard were inspired from a rural context whereas pergolas in the roof and offsetting structures were introduced for better movement, light and accessibility.

PROFESSIONAL

MUNRO ACOUSTICS, Mumbai, India
2021- 2022

IKEA, Noida, India



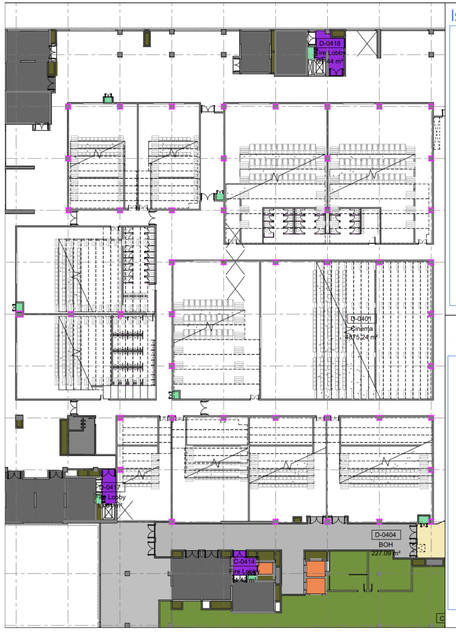
Meditation and Prayer Hall, Gujarat , India

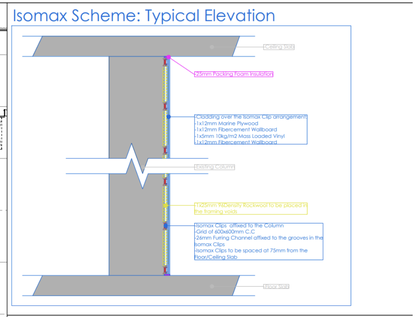
Work as an Architect and designer involved collaborating with different stakeholders on various projects and was particularly responsible to derive necessary relevant information and make informed technical design decisions. A great deal of learning and understanding of the practical knowledge of Revit and BIM360 interfaces along with the actual work-on-site.

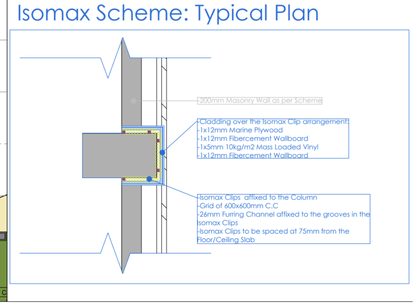
PROFESSIONAL

MUNRO ACOUSTICS, Mumbai, India

2021- 2022







Lead Architect: Design International, London

Acoustics Consultants: Munro Acoustics

Work as an Architect at Munro Acoustics involved in assessing the BIM model on extracting information to produce relevant technical details towards working drawings.

Key elements of the working drawings:

-Assess the BIM and Revit model to identify areas that potentially require acoustical treatments

-Generate acoustic detailed specification drawings as per the calculations on softwares that provided necessary RTs and absorption coefficients as per the materials and room sizes.

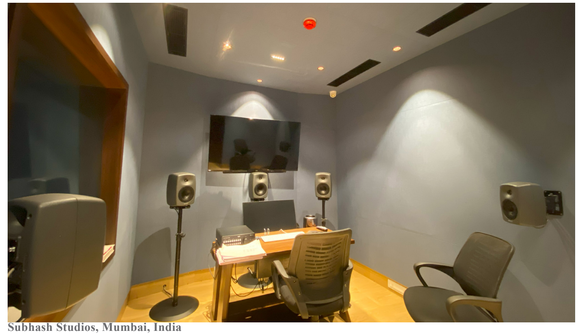
-Drawings particular involved acoustical specificatoins for columns, walls, floorings and ceilings as illustrated.

PROFESSIONAL

MUNRO ACOUSTICS, Mumbai, India

2021- 2022

Samsung Studio, Delhi, India



Subhash Studios, Mumbai, India

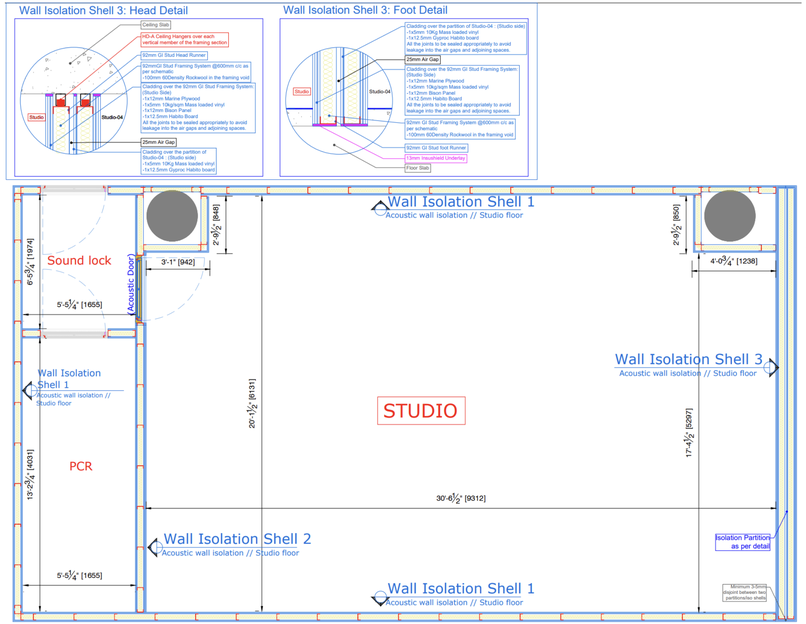
Worked as a designer in corporate shooting space for product launch, director interview etc. and collaborated with allied verticals of a filming exercise for the same. It was a wholesome opportunity to manage the disciplines of HVAC, electrical, and FF and deliver 2 studios with similar requests.

Learnt a great deal of communication and collaboration with clients and other services on these projects .

PROFESSIONAL

MUNRO ACOUSTICS, Mumbai, India

2021- 2022



Lead Architect: Alcove Design Consultants

Acoustics Consultants: Munro Acoustics

Work as an Architect at Munro Acoustics involved in designing the studio space along with the technical details for good-for-construction details.

Key elements of the project workings:

-Design a layout for a multi-functional studio space by providing adequate spaces for filming and control rooms.

-Generate technical drawings as per the calculations on softwares that provided necessary RTs and absorption coefficients as per the materials and room sizes.

-Drawings particular involved head and foot detail for isolation partition walls, flooring and ceiling isolation details, wall treatment details.

PROFESSIONAL

CANNON DESIGN INTERNATIONAL PVT. LTD. (MUMBAI OFFICE)

2014 - 2016

TATA Medical Center, Kolkata, India

CHUM Hospital, Montreal, Canada

Worked on one of the largest PPP projects based in Montreal, Canada and Tata Medical Center, Kolkata, India. The work involved preparing and co-ordinating the executional designs and drawings across offices of the Cannon Design Intl., from all over the world.

It was a first exprience and explorations for me in the field of BIM and Revit co-ordination in 2015 and working in an international setup.

PROFESSIONAL

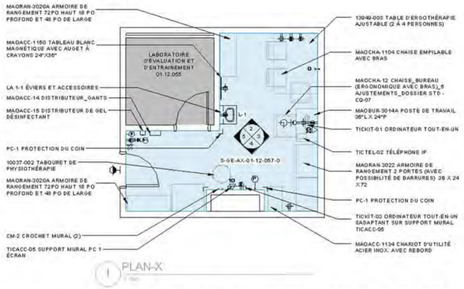
CANNON DESIGN INTERNATIONAL PVT. LTD. (MUMBAI OFFICE)

2014 - 2016

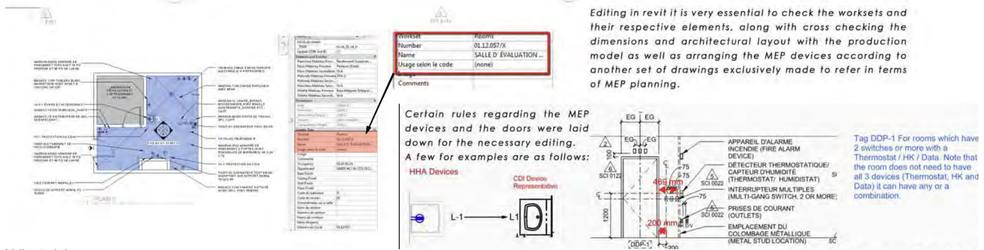
CHUM, A PPP HOSPITAL PROJECT IN MONTREAL.

2. EDITING IN BIM:

The following images are taken by keeping a certain worksets on/off in revit while the eiditing is in progress.



AS mentioned earlier, it is very important to have shifts from Model Manager to the user and vice-versa while doing the edits.
AMongst all the very first imporatants tasks is to check the room number and the name against the one mentioned in revit, as shown below.



Editing in revit it is very essential to check the worksets and their respective elements, along with cross checking the dimensions and architectural layout with the production model as well as arranging the MEP devices according to another set of drawings exclusively made to refer in terms of MEP planning.

Certain rules regarding the MEP devices and the doors were laid down for the necessary editing.
A few for examples are as follows:

Lead Architect: Cannon Design Intl.
Worked on co-ordinating and preparing drawings accross Revit and BIM by means of softwares such as Codebook, Bluebeam. Incorporated comments from the client as well architect leads from the US and Shanghai offices.

To access a detailed version of the workflow, kindly access:
Malhar Ambekar- Cannon Design

PROFESSIONAL

ND's Art World Pvt. Ltd., Mumbai, India

2017 - 2019

'Shirdi in America'- Temple complex in New Jersey, US

Digital Technology Knowledge Park, Maharashtra, India

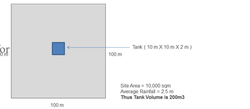
A temple complex conceptualised and designed as a replica of one in Maharashtra, India considering the local climatic conditions and norms of area requirements and allocations in New Jersey, USA. The temple is now in function and identifies itself as the replica in the West of a significant historic temple in India. Projects such as these involved in understanding the existing fabric of the town and the temple architecture and designing the same in a completely different environmental and social setup across the globe. It involved coordinating with architects in New Jersey to ensure the appropriation of the design guidelines and frameworks.

Projects such as the knowledge park with digital technology incorporations proposal in Shirdi, Maharashtra were a few initial experiences of working with architecture and design while incorporating technical architecture and digital design in generating a monumental piece.

PROFESSIONAL

EdEn (Educated Environment), Mumbai, India
2013 (3yd Yr. Arch. Voluntary Summer Internship)

To understand and implement the techniques of rain water harvesting, it was essential to have a strong justification for water storage, recycle, recharge etc.
It was done methodically considering a few instances and assumptions on the basis of the study done.

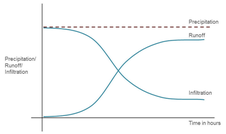


Considering coefficient of Runoff to be 0.95 the total collected rainwater for peak monsoon day with a rainfall of 40 mm is 380 m3 . Hence it is not possible to collect all of the rainwater for one entire season.

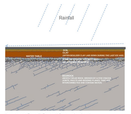
•Storage is much more expensive than recharge.

•Storing all the rain water in a tank is difficult.

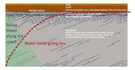
•Stored water not enough to sustain beyond monsoon. Thus the rest of the year the tank is redundant .



As the graph explains, with time the infiltration capacity of the soil reduces in monsoon resulting in more site runoff.



Increased Runoff Due to 'Concretization '



Saline water entering the ground table

SOIL TYPE ANALYSIS

According to Ground water level(200-250 ft) and Salinity / Non salinity of ground water following areas are listed out

Area	Ward	Geology	Properties of Rocks
Bandra(W)		Tuffs & Associated Rocks	Medium water holding capacity, low permeability
Khar(W)	Ward H/W	Clay, mud flats	Higher water holding capacity
Santacruz(W)		Tuffs & Associated Rocks	Medium water holding capacity, low permeability
Juhu	Ward K/W	Sandy	High infiltration rate, Medium water holding capacity
Vile Parle(W)		Clay, mud flats	Higher water holding capacity
Malabar hill	Ward D	Tuffs & Associated Rocks	Medium water holding capacity, low permeability
Raj Bhavan			

Source: Geologist Amar Joshi's Documents

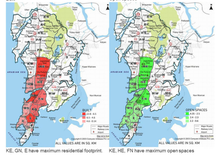
Source of properties of rocks: e- book: Soil Survey of Shasta Country Area, California, By United States Bureau of Chemistry and Soils

GEOLOGY AND WATER TABLE STUDY

Map showing water table of Mumbai

Map showing soil & rock type

STRATEGIES



The selection of site was a mapping exercise of understanding the city on the basis of its structure and the wards which were then mapped as per land uses for site selection backed by a stastical justification. Further study on geology of the city also facilitated in identifying key areas for rainwater harvesting.

THE 3E APPROACH

What you can't engineer, you educate.. What you can't educate, you enforce!

Problem solving

PARAMETERS FOR ANALYSIS

Engineer
1. Usage of space
2. Water consumption pattern
3. Existing infrastructure
4. Hydrogeology

Educate
1. Quantity of people
2. Age group
3. Duration
4. Time of peak use
5. Classification (migrating/residential)

Enforce
1. Owner (authority)
2. Local (impact)
3. Consumer (benefit)

SITE STUDY

HIGH STREET PHOENIX MALL

- Shopping, eating, hanging out.
- Drinking, food stalls.
- Sandy soil, tuff rocks
- Water table 50'-100' deep.
- Not feasible for digging.
- 75 people in sight.
- Mostly 20-50yrs.
- 30 minutes – 2 hours long usage.
- migratory + residential
- Owner- private
- Impactful site
- The mall itself would benefit from RWH scheme.

SITE STUDY

The central courtyard

- Fully concretized
- Shopping and eating activities
- Usage of water- cooking, toilets, cleaning, drinking
- Middle aged crowd in large number
- People come for chatting and hanging out, often for official meetings.
- Crowded, nearby the station, traffic, connectivity to major commercial as well as residential hubs

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CONTACT

DISSERTATION:

The Economic Implications of Urban Regeneration: The Gentrification of Madh Island, Mumbai

ART AND ARCHITECTURE

- Architecture | Imagination, Visualisation & Representation
- The World of Architecture & Films | Understanding Architecture's implications in Set-Design

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