

# Ar. Gourav N.Vinchu - Resume

## Ar. Gourav Nandkishor Vinchu

*Assistant Professor*

*D. Y. Patil College of Engineering and Technology, Kolhapur*

*Department of Architecture*



*“Gouri Sankul” Plot no. 15, Flat no. 202,  
Second floor, Shrikrushna colony, Devkar Panand,  
Sambhajinagar Road, Kolhapur. 416012*

*Mob: 7798719861*

*E-Mail: argourav0709@gmail.com*

**Education**    *Bachelor of Architecture*    Shivaji University (2013)

*Master of Architecture*        Shivaji University (pursuing)

**Nationality**        Indian

**Marital Status**    Single

**Languages  
Known**              English, Hindi, Marathi

## Ar. Gourav N.Vinchu - Resume

---

<b>Experience</b>	<b>D. Y. Patil College of Engg and Tech</b>	2014-Till Date
	<b>Prashant Deshmukh Prashant Deshmukh and Associates(PDA), Pune</b>	Trainee architect June-2010 to Nov.-2010
	<b>GAP Associates, Kolhapur</b>	Trainee architect Jan-2011
	<b>Ar. Sambhaji Patil Archland Pvt. Ltd. Kolhapur</b>	Junior Architect
	<b>Ar. Gourav N.Vinchu(own firm) Architect and Interior Designers, Kolhapur.</b>	June 2014 to Till Date

---

**Thesis Work**                      **B.Arch** - Institute of Music and Drama at Kolhapur.(2013)

- 
- Responsibilities Taken**
1. **Lecturer and Asst. Professor** for last 3.5 yrs. In architecture.
  2. **Paper setter and examiner** for Shivaji University.
  3. **Practicing Architect** for last 4 years.
  4. **Registered with Council Of Architecture** New Delhi.
  5. **Faculty co coordinator** for NASA competition, AAKAR Annual Events in Institute, Final Year Thesis

---

**CURRICULAR VISTA:**

NASA...

**National Association of Students of Architecture:**

As a student, I have been a member of NASA , since first year.

F.Y.B.Arch: Team member of Rubens Trophy in Annual Nasa in 07 at Bhopal.

S.Y.B.Arch: Team member of Rubens Trophy in Zonal Nasa in 08 at Loni.

T.Y.B.Arch: Team member of Hudako trophy in Annual Nasa in 09 at Chennai.

Team member of ANDC trophy in Annual Nasa in 09 at Chennai.

Final year B.Arch: Team member of Redesign trophy in Zonal Nasa in 2012 at Loni

Team member of Cultural trophy in Zonal Nasa in 2012 at Loni

---

**Research Papers**

1. NCETETA – 2015  
Organised by –D.Y.P.C.E.T. Kolhapur  
**Topic – Study of cost effective materials of infill walls for lower income group housing in India.**
2. NCETETA – 2016  
Organised by –D.Y.P.C.E.T. Kolhapur  
**Topic – Utilization of plastic waste in road construction as a cost effective material.**
3. NCETETA – 2016  
Organised by –D.Y.P.C.E.T. Kolhapur  
**Topic – Role of sunlight and shadows in Architectural Aesthetics.**
4. iCETETA – 2017  
Organised by –D.Y.P.C.E.T. Kolhapur  
**Topic – Application Of Aesthetics in Architecture and Design**

## Ar. Gourav N.Vinchu - Resume

5. iCETETA – 2017  
Organised by –D.Y.P.C.E.T. Kolhapur  
**Topic – Use of metaphors in Architecture to build sustainable buildings which are ecosensitive and have adopted to the natural environment of that place.**
6. iCETETA – 2017  
Organised by –D.Y.P.C.E.T. Kolhapur  
**Topic –Soundscapes in Architecture.**

### TRAINING, QIP ,WORKSHOPS AND SEMINARS ATTENDED

2014	National Conference on Emerging Trends in Engineering , Technology & Architecture NCETETA 14	1 Day	25 <sup>th</sup> Jan 2014
2014	Seminar-Role of green roofs and green walls in sustainable urbanscape By-Prof.N.D.Jirge	1 Day	12/07/2014
2014	Seminar- Supply chain management By- Prof. Supriya.M.Patil	1 Day	19/07/2014
2014	Documentary film – ‘Film Making’ By-Mr. Chandrakant Joshi	1 Day	11/08/2014
2014	Seminar-Study of construction technology of manmade Islands in Dubai and UAE By-Seema Patil	1 Day	26/07/2014
2014	Seminar- ‘Trenchless technology’ By-Gauri Mehtar	1 Day	18/01/2014
2014	Seminar –Introduction to landscape architecture By- Ar.Chandan Patil and Ar.Priyanka Chougule	1 Day	25/07/2014
2014	Workshop and Exhibition-‘Origami’ and ‘Calligraphy’ By-Mrs.Teja Kharat and Mr.Avinash Kharat	1 Day	11/08/2014

## Ar. Gourav N.Vinchu - Resume

2015	Seminar on 'Works of Kalatrava and Frank Lloyd Wright' by Prof. Satishraj Jagdale	1 day	2.02.2015
2015	Workshop on 'Concept, sketches and development of design ideas for thesis project' By Ar. Shirish Beri	1 day	14.02.2015
2015	Seminar on 'Environmental Studies' by Dr. Girish Kulkarni	1 day	05.03.2015
2015	Seminar on 'Green and Sustainable Aspects in Building' By Ar. Amarja Nimbalkar	1 day	14.03.2015
2015	IGBC Inauguration of Student Chapter and 'Awareness Program on Green Buildings' by Ar. Purva Keskar and Ar. Pranati Shroff	1 day	17.03.2015
2015	Seminar on 'Planning aspects of bungalows ' Ar. Umesh Raje	1 day	17.03.2015
2015	Workshop on 'Bamboo Craft 'by Mr. Makandar	1 day	29.03.2015
2015	Workshop on 'Photography' by Ar. Ashish Maldikar	1 day	29.03.2015
2015	Workshop on 'Meditation and Stress Management for students' by Mrs. Dahibhate	1 day	29.03.2015
2015	Workshop on 'Sketching' Ar. S.D.Moghe and Ar. J.H.More	1 day	29.03.2015
2015	Seminar on 'Artist In Concrete' by Ar. Sunil Patil	1 day	6.04.2015

## Ar. Gourav N.Vinchu - Resume

2015	Seminar on 'Campuspedia – college automation software'	1 day	8.07.2015
2015	Orientation program on 'Auto Desk Revit'	1 day	12.08.2015
2015	Seminar on 'Ecotect environmental analysis tool 'By Prof. N.N.Shinde	1 day	14.08.2015
2015	Seminar on 'Remembering Charles Chorrea' by IIA Kolhapur chapter	1day	5/9/2015
2015	PIC Performance workshop by Mr.Tejas Toro	1day	19/9/2015
2015	Workshop on 'Progecad' Mr. Gopinath from Autodesk software	2 days	11-12.10 . 2015
2015	Workshop on 'Form Follows Feelings' by Ar. Pramod Beri.	2 days	12-13.10.2015
2015	Seminar on 'Biomimcry in architecture' by alumnus Ar. Saket Katkar	1 day	26.10.2015
2015	Workshop on 'Green Buildings 'by CIIIGBC, Speakers - Mr.Sarvesh Javdekar and Mr. Gaurang Lele	1 day	30.09.2015
2015	Seminar on 'Presentation skills and Business English Communication' by 'BEC-Business English Certificates ,University of Cam	1 day	14.10.2015
2015	Seminar on 'Transformation from College to Profession 'by Architect's Academy, Ar.Aniruddha Kolhatkar	1 day	17.11.2015
2015	QIP by COA,NIASAPune'Regional Faculty Introduction Program'	5 days	23-27.11.2015
2016	Seminar ' <b>LAYA -Harmonizing with the</b>	1Day	09.03.2016

## Ar. Gourav N.Vinchu - Resume

	<i>Rhythm of life</i> , By Ar. Shirish Beri, in collaboration with Dept. of Arch. DYPCET, Kolhapur .		
2016	Interactive Seminar with Ar. Brian Tokivo, from Singapore.	1Day	17.03.2016
2016	Seminar on ' <i>Professional Practice</i> ' for Fourth Year Students by Architect's Academy, Ar. Aniruddha Kolhatkar, Pune	1Day	18.03.2016
2016	Seminar on ' <i>Knowledge Hours -Guidelines and Personal Interaction</i> ' by Prof. Ar. Manoj Parelkar, Mumbai, in collaboration with IID KRC.	1Day	26.03.2016
2016	Workshop on 'Solar Passive Architecture' by Ar. Mukund Datye organized by Indian Green Building Council, Pune chapter	1Day	24.09.2016
2016	National level workshop on Minimum Standards of Architectural Education- 2016 organized by Council of Architecture, New Delhi at Shivaji University, Kolhapur.	1Day	25.11.2016

---

## **PROJECTS**

### **CIVIL WORKS**

PROPOSED ELEVATION DESIGN FOR DR. D.Y.PATIL. PRATISHTAN'S COLLEGE OF ENGG.  
SALOKHRNAGR, KOLHAPUR.



### **LANDSCAPE WORK**

PROPOSED LANDSCAPE FOR CENTRAL PLAZA IN FRONT OF MAIN BUILDING AT SHIVAJI UNIVERSITY  
CAMPUS





**INTERIOR WORK**

PROPOSED INTERIOR FOR RESIDANCE OF MR. PRAMOD PATIL, HUPARI



# Ar. Gourav N.Vinchu - Resume

## SKETCHUP WORK(3D VIEWS)

PROPOSED RENOVATION OF COLLECTOR OFFICE BUILDING AT KOLHAPUR.



# Shivaji University, Kolhapur



the Chancellor, Vice-Chancellor and Members of the Management Council on

the recommendation of the Academic Council certify that

*Vinchu Gourav Nandkishor*

*Mother's Name - Niteema*

*has passed the*



## *Bachelor of Architecture*

*Examination in First Class*

*in the year May 2013.*

*The said degree has been conferred on him*

*at Kolhapur in the Winter Session*

*of the year two thousand fourteen.*

**In Testimony** *whereof are set the seal of the*

*University and the signatures of the*

*Registrar and the Vice-Chancellor.*

Registrar



Vice-Chancellor



STATEMENT SHOWING THE NUMBER OF MARKS OBTAINED BY Shri VINCHU GOURAV NANDKISHOR  
Mother's Name : NILEEMA

College : (DYP ) D. Y. Patil College of Engineering & Technology KOLHAPUR

in each head of passing at the B. Architecture (Final Year) examination held in May, 2013

SUBJECT NAME	Theory			Term Work			External			Total		
	Max	Min	Obt	Max	Min	Obt	Max	Min	Obt	Max	Min	Obt
1. Environmental Design	---	---	---	100	50	P 70	100	45	P 64	200	---	P134
2. Advanced Architectural Design - IV	100	45	63	200	100	P113	200	90	100	500	---	276
3. Advanced Building Technology ( Materials)	50	23	P 28	---	---	---	---	---	---	50	---	P 28
4. Advanced Building Technology ( Construction)	50	23	P 27	100	50	P 60	100	45	P 50	250	---	P137
5. Advanced Structure	100	45	46	50	25	P 38	50	23	P 33	200	---	117
6. Urban & Rural Planning	100	45	P 52	50	25	P 38	---	---	---	150	---	P 90
7. Environmental Services	100	45	P 47	50	25	P 37	---	---	---	150	---	P 84
8. Advanced Estimating Specification & Costing	100	45	P 45	50	25	P 40	---	---	---	150	---	P 85
9. Professional Practice & Building Regulation	100	45	P 82	50	25	P 36	---	---	---	150	---	P118
10. Advanced Working Drawing	---	---	---	100	50	P 60	100	45	P 59	200	---	P119
11. Project ( Sessional Work ) Internal	---	---	---	130	65	P100	---	---	---	130	---	P100
12. Seminar	---	---	---	100	50	60	---	---	---	100	---	60
13. Project Management (Elective I)	---	---	---	50	25	45	50	23	34	100	---	79
14. Valuation Of Immovable Properties (Elective IV)	---	---	---	50	25	39	50	23	32	100	---	71
15. Project Part-II	---	---	---	170	85	145	200	90	115	370	---	260
Total Marks in figures (Out Of 2800/1400)											1758	

ONE THOUSAND SEVEN HUNDRED AND FIFTY EIGHT OUT OF TWO THOUSAND EIGHT HUNDRED

Result: First Class

62.79%

Kolhapur Date: 25/6/2013

*Bhindeka*  
CONTROLLER OF EXAMINATIONS

# Council of Architecture

This is to certify that the name of

**Mr. Gourav Nandkishor Vinchu**

has been entered in the register and his Registration No. is

**CA/2014/65494**

This certificate is valid from the **seventh**  
day of **November 2014** to the thirty-first  
day of **December 2015** inclusive.

**List of Additional Qualifications :**

Given under the common Seal of the Council of Architecture,



this **seventh** day of **November, 2014**

Secretary

## Certificate of Registration

### Renewals

Valid Upto

Signature of  
Registrar

31.12.2016 A.D.

President

Details of Architect [ Reg. No: **CA/2014/65494**, Valid Till: **31/December/2026** ]

Architect Name:	Mr. Gourav Nandkisher Vinchu	Father/ Husband Name:	Shri. Nandkisher Muralidhar Vinchu	 
Date Of Birth:	07/Sep/1989	Gender:	Male	
Degree:	Original	Communication Address:	2280, B-WARD, TASTE GULLY, OPP. AAHAR HOTEL, MIRAJKAR TIKATI, MANGALWAL PETH,, Kolhapur - 416012, MAHARASHTRA	

**Current Status: Active**

Payment History	Last Payment Details					
Receipt No.	Receipt Date	Description	From	To	Amount	
D71507	02/Jan/2017	Renewal Fee(One Time Payment)			6,000.00	
 <a href="#">Print Renewal Application</a>					Receipt Total: 6,000.00	

Endorsement Due

From *	<input type="text" value="31/01/2027"/>	To *	<input type="text" value="31/12/2036"/>
--------	---	------	---

**ENDORSEMENT is Allowed, before 1 Year! Please try later!**

## 1. RESEARCH PAPERS

<b>Sr. No</b>	<b>Title</b>	<b>ISBN No</b>	<b>Year</b>	<b>Organized by</b>
1.	Utilization of plastic waste in road construction as a cost effective material.	ISBN9788192056180	NCETETA-2016	Dr. D.Y.Patil College of Engg. And Tech. Kolhapur.
2.	Role of sunlight and shadows in Architectural Aesthetics.	ISBN9788192056180	NCETETA-2016	Dr. D.Y.Patil College of Engg. And Tech. Kolhapur.
3.	Study of cost effective materials of infill walls for lower income group housing in India.	ISBN97881920566166	NCETETA-2015	Dr. D.Y.Patil College of Engg. And Tech. Kolhapur.
4.	Application Of Aesthetics in Architecture and Design	ISSN 0974-3154	iCETETA-2017	Dr. D.Y.Patil College of Engg. And Tech. Kolhapur.
5.	Use of metaphors in Architecture to build sustainable buildings which are ecosensitive and have adopted to the natural environment of that place.	ISSN 0974-3154	iCETETA-2017	Dr. D.Y.Patil College of Engg. And Tech. Kolhapur.
6.	Soundscapes in Architecture.	ISSN 0974-3154	iCETETA-2017	Dr. D.Y.Patil College of Engg. And Tech. Kolhapur.

## **2. PUBLICATIONS**

<b>Sr.no</b>	<b>Title</b>	<b>Magazine</b>	<b>Journal</b>	<b>Book</b>	<b>Year</b>	<b>Publisher</b>
1.	Vernacular Architecture	Aakar 2015 REVERB			2015	Dr. D.Y.Patil College of Engg. And Tech. Kolhapur. Dept. of Arch.

## **3. QIP'S/WORKSHOPS/SEMINARS**

<b>Sr.no</b>	<b>Title</b>	<b>Date</b>	<b>Duration</b>	<b>Organized by</b>
A	QIP's			
1.	QIP by COA,NIASAPune'Regional Faculty Introduction Program'	23 to 27 Nov. 2015	5 days	National Institute of Advanced studies in Architecture(NIASA) Pune and D.Y.Patil college of Architecture Kolhapur.
2.	Awareness program on Green buildings ( Insight to Green Buildings)	30 Sep. 2015	1 days	Indian Green Building Council, Pune Chapter and D.Y.Patil college of Architecture Kolhapur.
3.	One day faculty development program on Neuro Linguistic Programming	19 Sep. 2015	1 days	Dr. D.Y.Patil College of Engg. And Tech. Kolhapur. Dept. of Arch.
B	Workshops			
	National level workshop on Minimum Standards of Architectural Education- 2016	25 Nov. 2016	1 days	Council of Architecture, New Delhi at Shivaji University, Kolhapur.
	Workshop on 'Solar Passive Architecture" by Ar. Mukund Datye	24 Sep. 2016	1 days	Indian Green Building Council, Pune Chapter and D.Y.Patil college of Architecture Kolhapur.
	Workshop on Forms, Follows, Feelings By Ar. Prmod Beri	12 & 13 Oct. 2015	2 days	Dr. D.Y.Patil College of Engg. And Tech. Kolhapur. Dept. of Arch.







DR. D. Y. PATIL PRATISHTHAN'S  
**D. Y. PATIL COLLEGE OF ENGINEERING & TECHNOLOGY**  
KASABA BAWADA, KOLHAPUR, MAHARASHTRA, INDIA - 416 006

INTERNATIONAL CONFERENCE ON EMERGING TRENDS IN  
ENGINEERING, TECHNOLOGY & ARCHITECTURE

**iCETETA - 2017**

IN ASSOCIATION WITH

**Encarving  
Excellence**  
*Conceiving, Conceiving,  
Realizing, Celebrating*



≈ **CERTIFICATE** ≈

This is to certify that *Dr./Mr./Ms. Gourav N. Vinchu*.....  
from *D.Y.P.C.E.T. Dept. of Arch. Kolhapur*..... has participated / presented  
a paper entitled *Application of Aesthetics in Architecture  
and Design*..... in "iCETETA 2017" held on 11th March 2017.

**Prof. Dayanand N. Deomore**  
Convener

**Prof. Dr. Vijay R. Ghorpade**  
Principal



DR. D. Y. PATIL PRATISHTHAN'S  
**D. Y. PATIL COLLEGE OF ENGINEERING & TECHNOLOGY**  
KASABA BAWADA, KOLHAPUR, MAHARASHTRA, INDIA - 416 006

INTERNATIONAL CONFERENCE ON EMERGING TRENDS IN  
ENGINEERING, TECHNOLOGY & ARCHITECTURE

**iCETETA - 2017**

IN ASSOCIATION WITH

**Encarving  
Excellence**  
*Constructing, Decoding,  
Reimagining, Attending*



≈ **CERTIFICATE** ≈

This is to certify that *Dr./Mr./Mrs. Gourav N. Vinchu*.....  
from *D.Y.P.C.E.T. Dept. of Arch. Kolhapur*..... has participated / presented  
a paper entitled *Soundscapes in Architecture*.....  
.....in "iCETETA 2017" held on 11th March 2017.

**Prof. Dayanand N. Deomore**  
Convener

**Prof. Dr. Vijay R. Ghorpade**  
Principal



DR. D. Y. PATIL PRATISHTHAN'S  
**D. Y. PATIL COLLEGE OF ENGINEERING & TECHNOLOGY**  
KASABA BAWADA, KOLHAPUR, MAHARASHTRA, INDIA - 416 006

INTERNATIONAL CONFERENCE ON EMERGING TRENDS IN  
ENGINEERING, TECHNOLOGY & ARCHITECTURE

**iCETETA - 2017**

IN ASSOCIATION WITH

**Encarving  
Excellence**  
*Conceiving, Executing,  
Respecting, Retaining*



≈ **CERTIFICATE** ≈

This is to certify that *Dr./Mr./Ms. Gourav N. Vinchu*.....  
from *D.Y.P.C.E.T. Dept. of Arch. Kolhapur*..... has participated / presented  
a paper entitled *Use of metaphors in architecture, to build sustainable  
buildings which are ecosensitive*.....in "iCETETA 2017" held on 11th March 2017.  
*and have adapted to the natural  
environment of that place*

Prof. Dayanand N. Deomore  
Convener

Prof. Dr. Vijay R. Ghorpade  
Principal



DR. D. Y. PATIL PRATISHTHAN'S  
**D. Y. PATIL COLLEGE OF ENGINEERING & TECHNOLOGY**  
NBA ACCREDITED  
KASABA BAWADA, KOLHAPUR, MAHARASHTRA, INDIA - 416 006.

**6<sup>th</sup> NATIONAL CONFERENCE ON EMERGING TRENDS IN  
ENGINEERING, TECHNOLOGY & ARCHITECTURE**

**NCETETA-2016**



IN ASSOCIATION WITH



≈ **CERTIFICATE** ≈

This is to certify that Dr./Mr./Mrs. Gourav N. Vinchu  
from D. Y. Patil College of Engg & Tech, Kolhapur has participated / presented  
a paper entitled ROLE OF SUNLIGHT AND SHADOWS IN ARCHITECTURAL  
AESTHETICS in "NCETETA 2016" held on 30th Jan 2016.

Prof. S.B. Patil  
Convener

Prof. Dr. Vijay R. Ghorpade  
Principal



DR. D. Y. PATIL PRATISHTHAN'S  
**D. Y. PATIL COLLEGE OF ENGINEERING & TECHNOLOGY**  
NBA ACCREDITED  
KASABA BAWADA, KOLHAPUR, MAHARASHTRA, INDIA - 416 006

**6<sup>th</sup> NATIONAL CONFERENCE ON EMERGING TRENDS IN  
ENGINEERING, TECHNOLOGY & ARCHITECTURE**

**NCETETA-2016**



IN ASSOCIATION WITH



**CERTIFICATE**

This is to certify that Dr./Mr./Mrs. *Gourav N. Vinchu*,  
from *D. Y. Patil College of Engg & Tech, Kolhapur* has participated / presented  
a paper entitled *UTILIZATION OF PLASTIC WASTE IN A ROAD CONSTRUCTION  
AS A COST EFFECTIVE MATERIAL*.....in "NCETETA 2016" held on 30th Jan 2016.

Prof. S.B.Patil  
Convener

Prof. Dr. Vijay R. Ghorpade  
Principal



DR. D. Y. PATIL PRATISHTHAN'S  
**D. Y. PATIL COLLEGE OF ENGINEERING & TECHNOLOGY**

NBA ACCREDITED

KASABA BAWADA, KOLHAPUR, MAHARASHTRA, INDIA - 416 006

5<sup>th</sup> NATIONAL CONFERENCE ON EMERGING TRENDS IN  
ENGINEERING, TECHNOLOGY & ARCHITECTURE

**NCETETA - 2015**



**CONNECTING  
IDEAS**  
REFRESH RENEW REFOCUS

IN ASSOCIATION WITH



**CERTIFICATE**

This is to certify that Dr./Mr./Mrs. *Ar. Gourav N. Vinchu*  
from *D.Y.P.C.E.T, Kolhapur* has participated / presented  
a paper entitled *Study of cost effective materials of infill walls for*  
*lower income group housing in india* in "NCETETA 2015" held on 24th Jan 2015

  
Prof. Abhay M. Joshi  
Convener

  
Prof. Dr. Vijay R. Ghorpade  
Principal

# Utilization Of Plastic Waste In A Road Construction As A Cost Effective Material

Gourav N. Vinchu<sup>1</sup>, Neela D. Jirge<sup>2</sup>, Manorama R. Patil<sup>3</sup>

<sup>1</sup>Asst. Prof., D.Y.Patil College Of Engg. & Tech., Dept. Of Architecture, Kolhapur, Maharashtra.

<sup>2</sup>Asst. Prof., D.Y.Patil College Of Engg. & Tech., Dept. Of Architecture, Kolhapur, Maharashtra.

<sup>3</sup>Asst. Prof., SPSMBH'S College Of Architecture, Kolhapur, Maharashtra.

email: <sup>1</sup>gouravvinchu0709@gmail.com, <sup>2</sup>neelajirge@gmail.com, <sup>3</sup>manorama@yahoo.co.in

**Abstract:** Challenges are a way of life. From challenges arise the Endeavour to find solutions. Two such challenges that countries with large populations face are effective disposal of plastic waste and establishing a road network that having high strength, durable and economical and also eco friendly. On the face of it, it appears odd to bring up two matters, so different in nature, together. However, there is a solution that connects the two problems. Current methods adopted to deal with plastic waste disposal worldwide include use of landfills and low cost high quality waste. Both methods are known to have environmental and safety concerns. Today the majority of roads are constructed using bitumen, tar or cement. Each of these have their own merits and demerits. Another kind of road has been suggested: plastic road. This provides a solution to the problem of effective disposal of plastic waste at the same time increases the strength and durability of the road, addresses the environmental, economic and most importantly safety issue.

**Keywords:** Plastic waste, Use of waste material in road construction, Waste management, Cost effective Material, Environmental protection.

## I. INTRODUCTION:

Now a day's Plastic is everywhere in today's lifestyle. The disposal of plastic waste is a greater problem. These are non-biodegradable product due to which these materials pose environmental pollution and various health problems in humans and animals. In recent years, application of plastic waste has been considered in road construction with great interest many developing countries. The use of plastic in road construction is based on technical, economic and ecological factors. If these materials can be suitably used in road construction, the pollution and disposal problems may be partly reduced. Plastic use in road construction is not new. Recent studies in this direction have shown some hope in terms of using plastic-waste in road construction i.e.,

## II. WHAT IS PLASTIC?

A material that contains one or more organic polymers of large molecular weight, solid in its finished state and at some state while manufacturing or processing into finished articles, can be shaped by its flow.

Types of Plastics 1.Thermosets, 2.Elastomers, 3.Thermoplastics.

## III. WASTE PLASTICS - AS BINDER AND MODIFIER:

Waste plastics (polythene carry bags, etc.) on heating soften at around 130°C. Thermo Gravimetric analysis has shown that there is no gas evolution in the temperature range of 130-180°C. Moreover the softened plastics have a binding property. Hence, the molten plastics materials can be used as a binder and/or they can

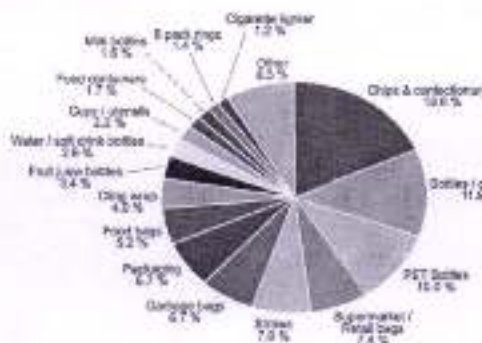
be mixed with binder like bitumen to enhance their binding property. This may be a good modifier for the bitumen, used for road construction. Plastic roads. Plastic roads mainly use plastic carry-bags, disposable cups and PET bottles that are collected from garbage dumps as an important ingredient of the construction material. When mixed with hot bitumen, plastics melt to form an oily coat over the aggregate and the mixture is laid on the road surface like a normal tar road. Today the availability of the waste plastics is enormous, as the plastic materials have become part and parcel of daily life. They either get mixed with Municipal Solid Waste and/or thrown over land area. If not recycled, their present disposal is either by land filling or by incineration. Both the processes have certain impact on the environment. Under this circumstance, an alternate use for the waste plastics is also the needed.

## IV. DIFFERENT TYPE OF WASTE PLASTIC (POLYMER) AND ITS ORIGIN:

TYPE OF WASTE PLASTIC (POLYMER)	ORIGIN
Low density polyethylene (LDPE)	Bags, sacks, bin lining and squeezable detergent bottles etc.
High density polyethylene (HDPE)	Bottles of pharmaceuticals, disinfectants, milk, fruit juices, bottle caps, etc.



Polypropylene (PP)	Bottle cap and closures, film wrapping for biscuits, microwave trays for ready-made meals etc.
Polystyrene (PS)	Yoghurt pots, clear egg packs, bottle caps.
Foamed Polystyrene	Food trays, egg boxes, disposable cups, protective packaging etc.
Polyvinyl Chloride (PVC)	Mineral water bottles, credit cards, toys, Pipes and gutters; electrical fittings, Furniture, folders and pens; medical disposables; etc.



#### V. TYPES OF ROADS USE TODAY:

There are 3 major types of roads that are used today. These are Bitumen/asphalt roads, tar roads and concrete roads.

##### Bitumen/Asphalt roads:

These roads are made using Bitumen and a stone aggregate. Two kinds of stone used are gravel and granite. The Bitumen is a substance derived from crude oil. It is a hydrocarbon that is semi-solid. It is obtained by refining heavy crude oil. It is the residue obtained by fractional distillation which removes lighter fractions such as kerosene, naphtha, gasoline and diesel. 85% of the 102 million tones of Bitumen produced per year are used for paving.

##### Tar road:

Tar roads are largely similar to Bitumen roads except for the fact that tar is used instead of Bitumen. Tar is similar to Bitumen in appearance in that it is black and sticky. Tar is produced from coal. When coal is heated to high temperatures it forms coke and carbon dioxide. Tar is a by-product. It was used as the binding agent but has over time been replaced by refined Bitumen.

##### Concrete Road:

The concrete comprises of a mixture, an aggregate, water and chemical additives that may be necessary to give it the desired properties. Once the concrete is mixed, it is transported to the location where it will be used. At this location it will be poured on the framework that reinforces it. After this it is consolidated to remove any air voids. Once this is done the concrete is finished by smoothing it with a blade of sufficient width. Finally it is left to cure and set. The concrete road is different from the others in that there is no stone aggregate base used.

#### VI. WHAT ARE PLASTIC ROADS?

Traditionally the construction of a bitumen or tar road is initiated by laying a base layer of aggregate. This aggregate comprises of crushed stone or gravel which is spread evenly over the area that is to become a road. On top of this, up to 4 layers of Bitumen are applied. The plastic road requires the addition of 5-10% of plastic waste to heated aggregate for 30-40 seconds before the addition of the heated Bitumen. The final road obtained was found to be superior to the conventional road in a number of ways. This process effectively uses a substantial amount of plastic waste. This road, called a plastic road, which has high strength, more durable, economical as well as eco-friendly.

#### VII. TYPES OF PLASTICS USED IN PLASTIC ROADS:

The most commonly used plastics in this process are polyethylene, polystyrene, polyester, and polypropylene. Polyethylene can be made in 3 different ways. Each of these 3 different ways results in polyethylene with different properties. Hence each one is given a slightly different name. Low density polyethylene is normally used to make plastic bags. High density polyethylene is used to make plastic chairs, dustbins, bowls etc. Linear low density polyethylene is used to make plastic sheets and wraps. Polystyrene is typically used in fast food cartons and as insulation. Polyester (Polyethylene terephthalate) is mainly used as a fabric for clothes. Polypropylene is used for clothing and is applied in radio controlled toy planes.

All of these plastics, upon incineration liberate large amounts of carbon dioxide and water if sufficient oxygen is used; otherwise, carbon monoxide is produced along with water. Polyvinylchloride (PVC) cannot be used because upon heating it can release dioxin which is toxic gas.

#### VIII. TWO PROCESSES USED IN THE CONSTRUCTION OF PLASTIC ROADS:

##### DRY PROCESS:

Plastics waste like bags, bottles etc are cut into a size between 2.36 mm and 4.75mm using shredding

machine. The aggregate mix is heated to 170°C, and then it is transferred to mixing chamber. Similarly the bitumen is to be heated up to a maximum of 160°C. At the mixing chamber, the shredded plastics waste is added over the hot aggregate. The plastics waste coated aggregate is mixed with hot bitumen.

**Wet process:**

In this process, the waste plastic is directly mixed with hot Bitumen at 160°C and this mixture is then mixed using a mechanical stirrer. This mixture also contains additional stabilizers and requires proper cooling. It is not popular because it requires huge investments, larger plants and more equipment than the Dry Process.

**Significant features of this process**

1. Durability
2. Environmental advantage
3. Economic advantage
4. Safety advantage

**IX. CONCLUSION:**

The generation of waste plastics is increasing day by day. Hence the use of waste plastics for Road construction is one of the best methods for easy disposal of waste plastics. It will help to increase the road life as well as will help to improve the environment and also creating a source of income. It is hoped that in near future we will have strong, durable and eco-friendly roads which will relieve the earth from all type of plastic-waste.

# Role Of Sunlight And Shadows in Architectural Aesthetics

Neela D. Jirge<sup>1</sup>, Gourav N. Vinchu<sup>2</sup>-Vrushali V. Toraskar<sup>3</sup>

<sup>1</sup>Asst. Prof., D.Y.Patil College Of Engg. & Tech., Dept. Of Architecture, Kolhapur, Maharashtra.

<sup>2</sup>Asst. Prof., D.Y.Patil College Of Engg. & Tech., Dept. Of Architecture, Kolhapur, Maharashtra.

<sup>3</sup>Asst. Prof., D.Y.Patil College Of Engg. & Tech., Dept. Of Architecture, Kolhapur, Maharashtra  
email: neelajirge@gmail.com<sup>1</sup>, gouravvinchu0709@gmail.com<sup>2</sup>, vtoraskar@gmail.com<sup>3</sup>

**Abstract.** Architecture is a blend of technology and aesthetics. For the aesthetic aspect of a building to be appreciated, sunlight is a fundamental element. Sunlight interacts with the external masses as well as internal spaces of a building, affecting the way we perceive it. Sunlight and shadows are two faces of a coin. Shadows have an equally important role to play in experiencing an architectural space. The aesthetic quality and the psychological effect of an architectural space, internal and external, change as the quality of sunlight changes. The aim of the paper is to research into integration of sunlight and shadows as an undeniable element of architectural aesthetics. The paper aims to highlight the importance of sunlight in all dimensions, in respect to architectural aesthetics.

**Keywords:** Natural light, Architectural aesthetics

## I. INTRODUCTION

Architecture is integration of functional, technical, social and aesthetic consideration of our built environment. According to Vitruvius, architecture shall fulfill three attributes in a building: durability- stand up robustly and stand in good condition, utility- to be useful and function well for people; and beauty- delight people and raise their spirit. Some of the master architects have quoted about relation of architecture and sunlight as follows: Light is an important element in all architecture. Le Corbusier said, "Architecture is the learned game, correct and magnificent, of forms assembled in the light." Louis Kahn said, "I sense Light as the giver of all presences, and material as spent light. What Light makes casts a shadow and the shadow belongs to Light." Without light, we cannot see form, color, or texture. Light—natural light—is what gives character to architecture. "Space and light and order. Those are the things that men need just as much as they need bread or a place to sleep", "In all my works, light is an important controlling factor". -Tadao Ando

Designers consider technical aspect too much as compared to the co-ordination of the material and mass with respect to light and shadows. Integration of sunlight into architecture can effectively narrate the architect's story by enhancing the visual communication of architecture.

## II. INTEGRATION OF SUNLIGHT INTO ARCHITECTURE

Integration of sunlight into Architecture has two aspects. Firstly the perception of building mass from exterior which can be perceived because of play of sunlight and shadows on its surface. Second aspect is introducing sunlight inside a building to enhance the psychological effect and ambience of the interior space. Introduction of sunlight into a building has a dual aspect of increasing efficiency of work environment. Harnessing

sunlight for solar energy is yet another way of integrating sunlight into built environment. The scope of this paper is limited to the aesthetic considerations of sunlight into internal and external built environment

## III. PSYCHOLOGICAL SIGNIFICANCE OF SUNLIGHT IN ARCHITECTURE

The classic understanding of light and architecture revolves around the visual system and the psychological responses it provokes: our perception of space, and aesthetics. However, advances in neuroscience have uncovered a new pathway, independent of the visual system, whereby light and darkness regulate physiology and behavior including sleep, alertness, mood, immune function, and health. This has broad implications for architecture since we must now begin to include biology in our design considerations. Using evidence from medical research to inform the process, this course will explore the affect of light and darkness on human health and well-being. Application examples include darkness protocols for acute-care patient rooms to insure that vital dark-induced functions occur without disruption; and light to improve the ability of office workers and students to maintain a high level of alertness and function during the day.



Fig. Brightly lit spaces are energizing and create alertness, dimly lit spaces are tranquil and meditative

#### IV. VISUAL PERCEPTION AND SUNLIGHT

##### 4.1 Role of Sunlight in visual perception of architectural spaces and masses

Architecture could be perceived in many different ways through the various senses. In architecture, visual perception is the most important as sight is the most dominant sense which helps us to appreciate the minute distinctions. Sunlight plays an important role in this perception

A building is never experienced all at once or from a distance. The journey through the building influences the perception of the user. Among all the arts, architecture engages the most with our sensory perceptions. The complete experience of architecture can be gained only when elements like colour, texture, material, detail and light and shadow are incorporated. Architecture speaks through the silence of perceptual phenomena. The sensations and the perceptions of the user are controlled by the various elements like light, colour and sound.

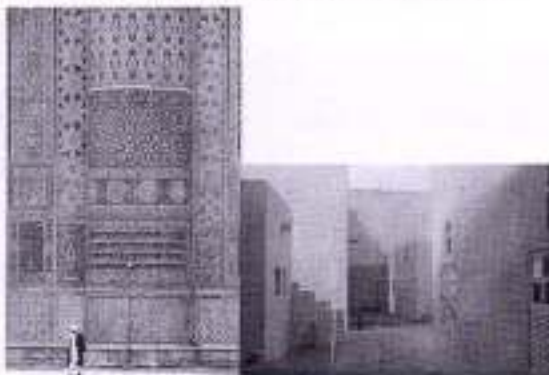


Fig. 1 Relation of light and shadow to colour, texture, material, detail of façade.

Perception is the process or method of gaining or gathering information through the various senses. At times, an object could even be perceived in a different way because of the pre-conceived notion the person has about the object. In the case of visual perception, the decision on how the space is perceived is left on the mind of the occupant. Every time we move or act, the environment around us keeps changing and hence our perception about the environment also changes. The difference of brightness, between lit and shadowed surfaces, contributes to our understanding of spatiality. Moreover, the spatial distribution of light is also extremely important for the spatiality, but also to orientation and the atmosphere.



Fig: The difference of brightness, between lit and shadowed surfaces, contributes to understanding of spatiality

#### V. SHADOWS IN ARCHITECTURE

line makes shadow, line makes surface

shadow makes mass, surface makes mass "

It is with shadows that the designer models his building, gives it texture, "color," relief, proportions. Imagine a building executed in pure white marble and exposed, not to sunlight, but to uniformly diffused light that would cast no shadows. The building would have no other apparent form than that of its contour. It would seem as flat as a great unbroken wall. Cornices, colonnades, all details, all projections within the contour lines, would disappear. The beauty of all the carefully wrought details, the fine balance and proportion of masses that had engaged the skill and enthusiasm of the designer, would vanish. The shadow generates an interaction between the surface and the ground



Fig. 1 Sunlit and shadowed surfaces convey balance and proportions of architectural masses

Shadow also plays an important role in proportion. It depends on the environment and the scale of the surface on which shadow is dealing. For example shadows in city

level is used to shade streets. And in unit level it is used to shade small areas.

The intensity of shadows depends upon the opaqueness of the object. The more transparent the material less the intensity of the shadow.

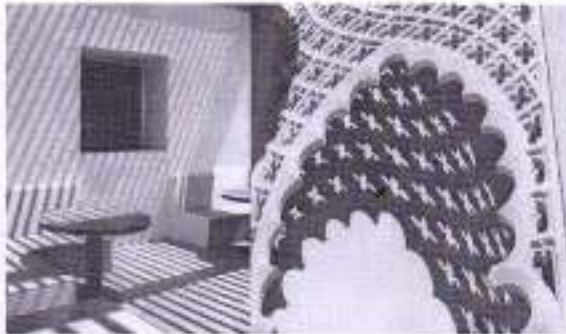


Fig: Voids become solids when the surface blocks the sunlight

## VI. SUNLIGHT/SHADOWS AND DYNAMISM IN ARCHITECTURE

Light and shadow can create dynamism within a space by giving the space a meaning which is beyond function. The atmosphere of a space is greatly influenced by the element of light. The value of light should not be underestimated as it is a powerful and strong vehicle of expression. It is very important for us to realise how important light is in the well being of humans and hence we should gain an appreciation of how light influences and affects our lives. Extra depths of experience can be achieved within the space by the interplay of light and shadow.

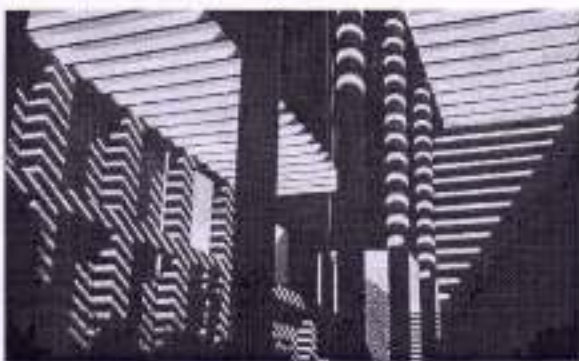


Fig. Play of light and shadow provides depth to architectural spaces

Light and shadow influences the spatial context and helps to transform the atmosphere within the space. The quality of the natural light varies and differs throughout the day, a through the various seasons and also according to geographical location. As the sun moves from the east to the west, shadows are created which convey a sense of time. The movement of shadows carries with it the

movement of place which leads to dynamism within the space. In the words of the Swiss architect Peter Zumthor "how much light does man need and how much darkness?" Both of these aspects are important in creating balance in a space which leads the space to be dynamic.

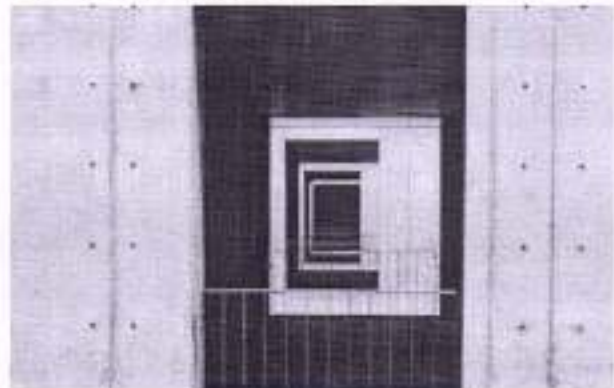


Fig: Shadows convey a sense of time

## VII. SUNLIGHT AND SACRED ARCHITECTURE

With the correct consideration of light and shadow, atmospheres can be created which are beyond function and most of these constructions are religious in nature. It is believed that natural light is considered as a link between God and man. Light forms the basis of creating a divine presence for the believer in the place of worship. A wide range of beliefs and values cannot be expressed with the material form and hence light is introduced within the space in a manner in which it reveals dramatic variations,

### 7.1 The use of sunlight in Islamic architecture

According to the Quran, light was one of God's first creations. For Muslims, light represents the divinity of God, so natural light is an integral design element in Islamic architecture. Islamic buildings such as mosques have traditionally incorporated minimal ornamentation in order to emphasize the enclosure of this divine space, which is defined by the building's structural design, its facade, materiality, vertical and horizontal lines, and the ways that light addresses the structure.

#### 7.1.1 Jali or Screens

An ornamental screen, or jali, is a prominent feature of Islamic architecture and mediates the amount of sunlight that enters a space. Jali is a delicately carved latticed screen that also exemplifies the use of the ornament in Islamic art and architecture. Jalis filter out strong sunlight and keep spaces cool, which is ever important in the Middle East's harsh sun. Jali or the screen is mediator of light and space in Islamic architecture. In architecture, screens tend to blur the distinction between interior and exterior space. In Islamic architecture, they are used to mediate the direct sunlight by casting intricate shadow patterns in the interior space. These patterns, which I will talk about in my next post, are very important in the art and architecture of Islam.

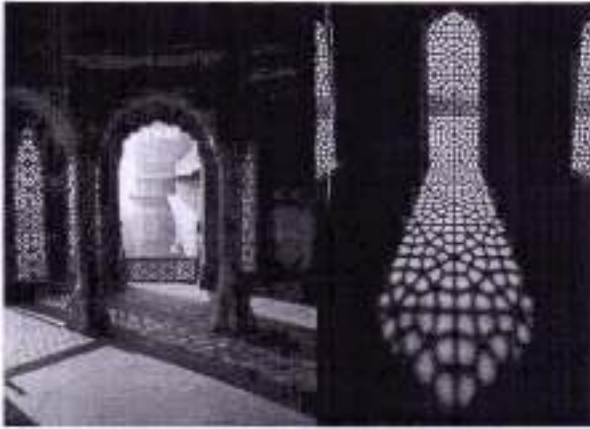


Fig: Screens mediate the direct sunlight by casting intricate shadow patterns in the interior space.

### 7.1.2 Surface Decoration

The use of light in Islamic architecture creates a play of light and shadow that shapes the interiors of buildings. For example, screens not only act as ornamental decorations and keep spaces cool, but the shadows created by a jali weave intricate patterns through rooms and corridors. The materiality of a building comes to life more vividly: carved stucco, stonework and brickwork are illuminated and emphasized by natural light



Fig: Materiality of a building comes to life more vividly; stonework and ceramic tile work are illuminated and emphasized by natural light

## 7.2. Sunlight and Indian temple architecture

### 7.2.1 Interior spaces and natural light

In Indian context of sacred architecture, caves have long been regarded as places of sanctity. Man-made caves hold the same sanctity as natural caves. The sanctuary in all Indian religious structures, retains the cave-like feeling of sacredness, being small and dark without natural light. The quality of natural light reduces progressively as the devotee approaches the garbhagriha (inner core of temple). This journey is symbolic to the spiritual journey of the devotee from external materialistic world towards his

spiritual core. Appropriate ambience is created by the filtered quality of sunlight used in the interiors



Fig: Natural light reduces progressively as the devotee approaches the garbhagriha.

### 7.2.2 Temple facades and sunlight

The profusely sculptural ornamented facades of Indian temple architecture cannot be appreciated without play of sunlight and shadows on its surface. Sunlight is the link in Indian temple architecture which connects the temporal world (the stories depicted in the form of sculptures) spiritual world.



Fig: Sculptural quality of temple facades is enhanced by play of sunlight and shadows.

#### **VIII. CONCLUSION**

Designer should understand the significance of natural light/sunlight and shadows as a very effective tool for expression of architectural mass and spaces. Harnessing of sunlight for aesthetic purpose creates required ambience and lends dynamic quality to the built environment.

#### **IX. REFERENCES**

- 1] [www.e-architect.co.uk/sweden/stockholm\\_library\\_building.htm](http://www.e-architect.co.uk/sweden/stockholm_library_building.htm)
- 2] Julio Cortázar, 'To Dress a Shadow', in *Around the Day in Eighty Worlds*. San Francisco, North Point Press, 1986
- 3] Lam, W.M.C. (1986). *Sunlighting as Formgiver for Architecture*. New York: Van Nostrand Reinhold Company.
- 4] [https://en.wikipedia.org/wiki/sunlight\\_and\\_architecture](https://en.wikipedia.org/wiki/sunlight_and_architecture)

## STUDY OF COST EFFECTIVE MATERIALS OF INFILL WALLS FOR LOWER INCOME GROUP HOUSING IN INDIA

Ar. Seema.U.Patil<sup>1</sup>, Ar.Vrushali.V.Toraskar<sup>2</sup>, Ar. Gourav.N.Vinchu<sup>3</sup>

<sup>1</sup>Assistant Professor, Department of Architecture, D. Y. Patil College of Engg. & Tech, Kolhapur.

<sup>2</sup>Assistant Professor, Department of Architecture, D. Y. Patil College of Engg. & Tech, Kolhapur

<sup>3</sup>Assistant Professor, Department of Architecture, D. Y. Patil College of Engg. & Tech, Kolhapur.

E-mail: <sup>1</sup>seema.ptl@rediffmail.com, <sup>2</sup>vtoraskar@gmail.com, <sup>3</sup>gouravvinchu0709@gmail.com,

*Abstract:* Adequate shelter for all people is one of the pressing challenges faced by the developing countries. The dream of owning a house particularly for low-income and middle-income families is becoming a difficult reality. Hence, it has become a necessity to adopt cost effective, innovative and environment-friendly housing technologies for the construction of houses and buildings for enabling the common people to construct houses at affordable cost. This paper discusses such materials that can be used for construction of lower income group housing. Strength and durability of the structure, stability, safety and mental satisfaction are factors that assume top priority during cost reduction. It is found that about 26.11% and 22.68% of the construction cost can be saved by using low cost housing technologies in comparison with the traditional construction methods in the case studies for walling and roofing respectively. This proves that using low cost housing technologies is a cost effective construction approach for the industry.

**Keywords:** affordable housing , cost effective materials , Infill walls ,GFRG wall system

### 1. INTRODUCTION

India's urban population has grown over the past three to four decades from 109 million to 377 million in 2011 and is expected to grow almost 600 million by 2030. One out of every six persons in urban area and one out of every ten person in rural area do not have a livable house. Rapid urbanization has led to people increasingly living in slums and unhygienic conditions of the economically weaker sections.

During the eleventh five year plan it is estimated that total housing requirement in Indian cities by the end of 2012 was 26.53 million dwellings. with respect to this scenario a minimum of 30 million additional houses will be required by 2020.

The motivation of construction of Affordable Housing aims to encourage private sector participation in creation of affordable housing stock recognizing that mere efforts of Government would be insufficient to address the housing shortage.

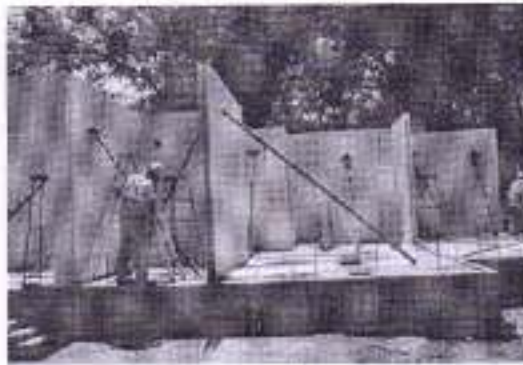
India has a strong vision, but weaker implementation strategy – it needs enforceable

housing targets (national and state level & local level) for market, low cost and affordable housing. We believe that the technology proposed by IIT Madras, and demonstrated recently by the construction of the 'GFRG demo building', has the potential to meet this challenge of providing rapid affordable mass housing for E.W.S and L.I.G people.

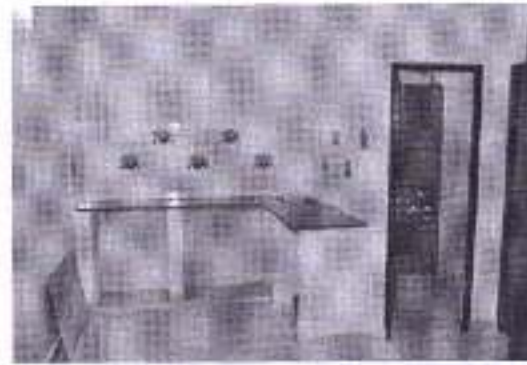
### 2.GENERAL INTRODUCTION TO GFRG WALL PANELS

GFRGs are the pre-fabricated load bearing panels used for the construction of walls at a rapid rate. These panels can be sliced and resized to suit your needs and they simply need to be fitted on the foundation using a crane. Everything from walls to ceilings can be built in this manner. A concrete belt is made on the foundation on which rods are later erected. The panels are then fixed onto the base. They need to be given support till they are completely fixed. It is through the small vacuum space inside the panels that the rods from the foundation go by. This space is later concreted to strengthen it further. The doors and windows can be cut out in precise shapes and sizes.





GFRG panel erection on plinth



Interior of GFRG panel construction



Reinforcement in panels



Exterior finish of GFRG panels

Concrete lintels are made inside these panels within which the doors and windows can be later placed. A layer is fitted on the roof before the panels are arranged and fixed on top of them. A thin layer of concrete is then applied over the panels from where the next storey can be built.

Since 2003, the IITM research team had conducted extensive studies on the use of these panels as structural members for all components of the building, including earthquake resistant design. These panels, originally developed by RBS Australia, were intended as wall panels ('Rapidwall') suitable for rapid erection of walls in buildings to carry gravity loads. The panels are made of calcined gypsum plaster, combined with special additives and glass fibres, to produce GFRG panels - 12m long, 3m high and 124mm thick (with hollow cavities).

The IITM research group extended the application of this product for the entire building system - including floors, roofs, and staircases, thus significantly reducing the consumption of Reinforced Cement Concrete (RCC). The team also collaborated in the indigenous development of an excellent water-proofing material, which is essential for prolonged durability of the GFRG panels, especially in the case of roofs and toilets.

### 3. CONSTRUCTION METHODOLOGY OF GFRG PANELS

The panels are prefabricated and cut to desired sizes based on room dimensions with openings for doors and windows, thus making rapid construction possible. A panel has two skins of 15 mm thickness that are interconnected at regular intervals

(250 mm) with 20 mm thick ribs. The cavities formed by these interconnections can be used for several purposes - filling with concrete, and laying electrical conduits and plumbing pipes. Filling the cavities with concrete increases the vertical load-carrying capacity almost tenfold, and inserting vertical steel bars in these cavities, contributes to their earthquake resistance.

In a multi-storeyed building, the number of concrete-filled cavities and steel bars can be reduced at the higher floor levels. When used as floor slabs, reinforced concrete beams can be embedded and hidden in some of the cavities, as per the design. The overall weight of the structure and consumption of concrete comes down significantly. Conventional plastering is eliminated.

#### 4. COST EFFECTIVENESS OF GFRG WALL SYSTEM

The price charged for the panels is 1000 rupees per square metre. A 12x 3 metre sized panel costs 36000 rupees. 10 such panels would be more than enough for the roof and walls of a house with a plinth area of 1000 square feet. You can imagine how much it would cost to build a similar house in the normal manner. Using panels would minimize your expense to mere 4 Lakhs. The total expense for the construction of houses in this manner can be reduced to half of that of normal houses.

If you still doubt its efficiency, you should visit the double storey building of IIT Chennai campus and several houses at Bangalore city. The finishing and quality of those buildings which is as perfect as that of normal brick houses would definitely leave you awed.

#### 5. ADVANTAGES OVER CONVENTIONAL BUILDINGS

High speed of construction: GFRG demo building with four flats in two storeys (total 1981 sq.ft.) built within a month!

- Less built-up area for the same carpet area: wall panels are only 124mm thick.
- Less embodied energy and carbon footprint: significant reduction in use of cement, sand, steel and water; recycling of industrial waste gypsum.
- Lower cost of structure: savings in materials; no plastering.
- Lower building weight (panels weigh only 43 kg/m<sup>2</sup>), contributing to savings in foundation and reduction in design for earthquake forces, particularly in multi-storeyed construction.
- Buildings up to 8-10 storeys can be designed using this load-bearing system, without the need for beams and columns.
- Excellent finishes of prefabricated GFRG panels - used for all the walls, floors and staircases, with minimal embedded concrete: no need for additional plastering.

#### 6. WORLDWIDE RECOGNITION

The panel made houses, whose construction began in Australia in the 90's has many recognized qualities to its credit. Several countries worldwide have adapted this method for the construction of houses. Madras IIT is the first place in India where its quality was tested and confirmed. It should be noted that this construction material can be reliably used even at earthquake prone zones.

#### 7. CONCLUSION

At present the options available for construction of walls and roofs are becoming uneconomical for common man day by day. The total minimum construction cost in present scenario is about 1200 Rs/Sq.ft. With the introduction of GFRG wall panels it is a boon for achieving the dream of owning a house for the EWS & LIG people as the construction cost using GFRG wall panel is less than 950 Rs/Sq.ft. Due to this factor it can be possible to bridge the large gap of supply and demand of LIG housing in India.

#### 8. REFERENCES

- [1] Roy U.K., Dr. Roy M., Prof.S.Saha "Development options and appropriate modules for Mass housing in India" <| from journal of birla institute of tech.spring 2010 |
- [2] Research report on "Making affordable housing work in India" <| from rics the mark of property professionalism worldwide ,Nov 2010 |
- [3] Research report of KPMG on affordable housing- "A key growth driver in real estate sector".
- [4] "Affordable housing in partnership" <| guidelines from ministry of housing, government of India, dec 2013 |
- [5] "Affordable housing for urban poor" <| guidelines prepared by national resource centre spa, New Delhi.
- [6] Report of round table conference at gra on "Affordable housing" <| july 2012.
- [7] Research report by IIT Madras on GFRG rapid building system.



# VERNACULAR ARCHITECTURE

~ ~ ~  
- Ar. Gourav N. Vinchu  
Assistant Professor



Vernacular architecture, Paul Oliver defines in his book *Dwellings*, "it is the architecture of people, and by the people, but not for the people." Vernacular architecture, as the term which refers to the construction methodology that natives employ to build shelters using locally prevalent resources and conditions. The building knowledge is developed by trial and error and handed down the generation through local traditions.

Therefore, it has been contemptuously dismissed as being crude and coarse. But, a new school of architects have developed on it in the last few decades to come up with fascinating, and sometimes awe-evoking, alternate dwellings that are in harmony with the natural landscape and the human spirit.

Estimates suggest that at least 90% of buildings are designed with no help of any professional architects and designers. Local designs evolve in compliance with the economic feasibility, topography and climate. Indigenous materials are employed to create distinctive residences that merge with the surrounding landscape.





Even the interior spaces are decorated in a fashion that evokes nature. With swelling populations, unstable ecology and economic worries hitting hard, numerous architects around the world are increasingly looking towards sustainable solutions. They attempt to blend modern architectural theories to vernacular building cultures and often come up with strikingly surprising innovations. The resultant is humane and ecologically sound buildings with growing interest in earth friendly building construction techniques. Architects are relearning various practical aspects of infusing modern technologies with bygone traditions and cultures. They are actively building upon the knowledge of our grandparents to build homes that would secure our children's future. The vernacular is the source of many interesting innovations in building. From mud huts to European styled colonial mansions, from bamboo sheds to massive high rise, modern architects are constructing shelters, where indoor and outdoor living seamlessly combines to awake the senses and bring the Vernacular architecture dwellers closer to their natural world. Widely varies from the spectacular Mayan Tikal and Machu Picchu temples to humble dwellings like the African tree-houses and the Native American log cabin.



### 3. QIP'S/WORKSHOPS/SEMINARS

Sr.no	Title	Date	Duration	Organized by
A	QIP's			
1.	QIP by COA,NIASAPune'Regional Faculty Introduction Program'	23 to 27 Nov. 2015	5 days	National Institute of Advanced studies in Architecture(NIASA) Pune and D.Y.Patil college of Architecture Kolhapur.
2.	Awareness program on Green buildings ( Insight to Green Buildings)	30 Sep. 2015	1 days	Indian Green Building Council, Pune Chapter and D.Y.Patil college of Architecture Kolhapur.
3.	One day faculty development program on Neuro Linguistic Programming	19 Sep. 2015	1 days	Dr. D.Y.Patil College of Engg. And Tech. Kolhapur. Dept. of Arch.
B	Workshops			
	National level workshop on Minimum Standards of Architectural Education-2016	25 Nov. 2016	1 days	Council of Architecture, New Delhi at Shivaji University, Kolhapur.
	Workshop on 'Solar Passive Architecture" by Ar. Mukund Datye	24 Sep. 2016	1 days	Indian Green Building Council, Pune Chapter and D.Y.Patil college of Architecture Kolhapur.
	Workshop on Forms, Follows, Feelings By Ar. Pramod Beri	12 & 13 Oct. 2015	2 days	Dr. D.Y.Patil College of Engg. And Tech. Kolhapur. Dept. of Arch.



# CERTIFICATE



This is to certify that

Ar./Prof./Shri./Smt. *Gaurav N. Vinchu*, D.Y.P.C.E.T, Kolhapur

has participated in one day National Level workshop on

**Minimum Standards of Architectural Education - 2016**

Organized by

**Council of Architecture, New Delhi**

in collaboration with

**Shivaji University, Kolhapur**

on Friday, 25th November, 2016 at Ramanujan Hall,  
Department of Mathematics, Shivaji University, Kolhapur.

Dr. Ar. R. B. Koli  
Chairman, BOS Arch.

Shivaji University, Kolhapur

Dr. D. R. More  
Director, BCUD

Ar. Vijay Garg  
Vice President

Council of Architecture, New Delhi

Ar. Biswaranjan Nayak  
President



Confederation of Indian Industry



*Certification of Participation*

This is to confirm the participation of

**Vinchu Gourav Nandkishor**

at the

Session on Solar Passive Architecture with Ar Mukund Datye

organised by

Indian Green Building Council, Pune Chapter

on

24<sup>th</sup> September 2016 at Dr D Y Patil College of Engineering & Technology, Kolhapur

**J P Shroff**

Chairman, IGBC Pune Chapter

**Dr Prem C Jain**

Chairman, CII IGBC



Council of Architecture

CERTIFICATE OF PARTICIPATION

This certificate is awarded to

*Vinchu Gourav Nandkishor*

for participating in the

**"REGIONAL FACULTY INDUCTION PROGRAMME"**

from 23<sup>rd</sup> to 27<sup>th</sup> November, 2015

Council of Architecture

Coordinated by National Institute of Advanced Studies in Architecture (NIASA)

with

"School of Architecture, D. Y. Patil College of Engineering & Technology, Kolhapur"

Developed and designed by

**Prof. Jayashree Deshpande,**

Director, National Institute of Advanced Studies in Architecture (NIASA), Pune.

Prof. Jayashree Deshpande  
Director, NIASA







Confederation of  
Indian Industry



# Certification of Participation

This is to confirm the participation of

Ar. Gaurav Vinchu .....

from

D.Y.P.E.E.T .....

at the Awareness program on Green Buildings (**Insight to Green Buildings**)  
organised by

**Indian Green Building Council, Pune Chapter**

on

30<sup>th</sup> September 2015 at Dr D Y Patil College of Engineering & Technology,  
Kolhapur

S Raghupathy

Executive Director & Head, CII GBC

Dr Prem C Jain

Chairman, IGBC



## Certificate

This is to Certify that ...

Mr./Ms. Gourav N. Vinchu

participated in **One Day Faculty Development Program** on **Neuro Linguistic Programming**, conducted by D. Y. Patil College of Engg. & Tech. under I. S. T. E. Students & Staff Chapter on 19th Sept. 2015.

Mr. Sunil J. Raykar  
Co-ordinator  
ISTE Student & Staff Chapter

Dr. Vijay R. Ghorpade  
Principal  
D.Y.P. C.E.T.

Various responsibilities shouldered as a resource person at :-

**A. INSTITUTE LEVEL**

<b>Sr. No</b>	<b>Head</b>	<b>Responsibilities</b>	<b>Year</b>
1.	Class Teacher	Maintain Record of class, Attendance, Results and parents meet	2014 to 2017
2.	Faculty co coordinator for final year thesis	Arrangement of final year reviews and guest lecture for thesis	2017
3.	NASA coordinator ( National And zonal level competition)	Arrangement of guest lecture, guides for NASA trophy work.	2014 to 2017
4.	AAKAR coordinator Annual socials)	Arrangement of various workshops, seminars, competitions, Architectural activities, etc.	2014 to 2017
5.	Conduciveness of environment for learning	Corridor display, ambience of department.	2014-2017

**B. UNIVERSITY LEVEL**

<b>Sr. No</b>	<b>Head</b>	<b>Responsibilities</b>	<b>Year</b>
1.	Examiner	Supervision	2014 to 2017
2.	Assessor	Assessment and moderation	2017
3.	External Jury	External oral examiner	2017

**C. NATIONAL AND INTERNATIONAL LEVEL**

<b>Sr. No</b>	<b>Head</b>	<b>Responsibilities</b>	<b>Year</b>
1.	NCETETA-2016 Registration and Certificate distribution	Registration and certificate distribution of participants	2016
1.	Exhibition Tracing Narratives-Indian Landscape Design	Arrangement regarding display of Exhibition Panel	Jan-2017

Various responsibilities shouldered as a resource person at:-

**A. INSTITUTE LEVEL**

<b>Sr. No</b>	<b>Head</b>	<b>Responsibilities</b>	<b>Year</b>
1.	Class Teacher	Maintain Record of class, Attendance, Results and parents meet	2014 to 2017
2.	Faculty co coordinator for final year thesis	Arrangement of final year reviews and guest lecture for thesis	2017
3.	NASA coordinator ( National And zonal level competition)	Arrangement of guest lecture, guides for NASA trophy work.	2014 to 2017
4.	AAKAR coordinator Annual socials)	Arrangement of various workshops, seminars, competitions, Architectural activities, etc.	2014 to 2017
5.	Conduciveness of environment for learning	Corridor display, ambience of department.	2014-2017

**B. UNIVERSITY LEVEL**

<b>Sr. No</b>	<b>Head</b>	<b>Responsibilities</b>	<b>Year</b>
1.	Examiner	Supervision	2014 to 2017
2.	Assessor	Assessment and moderation	2017
3.	External Jury	External oral examiner	2017

**C. NATIONAL AND INTERNATIONAL LEVEL**

<b>Sr. No</b>	<b>Head</b>	<b>Responsibilities</b>	<b>Year</b>
1.	NCETETA-2016 Registration and Certificate distribution	Registration and certificate distribution of participants	2016
2.	Exhibition Tracing Narratives-Indian Landscape Design	Arrangement regarding display of Exhibition Panel	Jan-2017
3.	iCETETA-2016 Registration and Certificate distribution	Registration and certificate distribution of participants	March-2017



DR. D. Y. PATIL PRATISHTHAN'S  
**D. Y. PATIL COLLEGE OF ENGINEERING & TECHNOLOGY**  
NBA ACCREDITED  
KASABA BAWADA, KOLHAPUR, MAHARASHTRA, INDIA - 416 006

6<sup>th</sup> NATIONAL CONFERENCE ON EMERGING TRENDS IN  
ENGINEERING, TECHNOLOGY & ARCHITECTURE  
**NCETETA -2016** | ON  
30<sup>th</sup> JANUARY  
2016

Chief Patron  
Padmashree Dr. D. Y. Patil  
Founder President,  
Dr. D. Y. Patil Pratishthan,  
Kolhapur.

Patron  
Hon. Dr. Sanjay D. Patil,  
President,  
Dr. D. Y. Patil Pratishthan,  
Kolhapur.

Hon. Shri Satej D. Patil,  
Vice President,  
Dr. D. Y. Patil Pratishthan,  
Kolhapur.

Mentor  
Hon. Shri Ruturaj S. Patil  
Trustee,  
Dr. D. Y. Patil Pratishthan,  
Kolhapur.

Director (Acad.)  
Dr. V.P. Gosavi  
Principal  
Prof. Dr. Vijay R. Ghorpade  
Vice Principal  
Prof. Dr. Mrs. K. V. Kulhari  
Convener  
Prof. S.B. Patil

Technical Committee  
Prof. R. G. Savant  
Prof. Dr. K. T. Jadhav  
Prof. M. J. Patil  
Prof. G.A. Patil  
Prof. A. N. Jadhav  
Prof. S. R. Todkar  
Prof. P. D. Bhosale  
Prof. K. P. Chopade

Date:-8.3.2016

## CERTIFICATE

This is to certify that **Prof. Gaurav Vinchu** of **Architecture** Department has participated in Organizing National Conference on Emerging Trends in Engineering, Technology and Architecture, NCETETA-2016, held on 30<sup>th</sup> January 2016.

He worked in the Certificate Distribution committee as a member and performed the assigned work in the best possible manner. Your sincere efforts are appreciated.

Prof. S.B. Patil

**Convener**

Dr. Vijay R. Ghorpade

**Principal**



Jobs : C-18.

# SHIVAJI UNIVERSITY, KOLHAPUR

## ATTENDANCE CERTIFICATE

Sl. No. **2760**

This is to certify that Prof. / Dr. / Sr. / Smt. Gowrav. N. Vinchu of D.Y.P.C.E.T. Kop has attended the Central Assessment work in the subject of B.T. Const of mat-II & H.S. H.C.-I at F.Y. B. Arch Examination in the University office, Kolhapur From 29<sup>th</sup> Nov; 30<sup>th</sup> Nov to 13<sup>th</sup> dec & 14<sup>th</sup> dec For 4 day's.

Assessment of A.B.'s	moderation on of A. B.'s	Total
101	-	101

No. SU/EXAM/CAP/

Date: 20.12.16.

T. V. K. K.  
Director,

Central Assessment Work  
B. Arch Examination  
 Oct / Nov / Apr / May  
 Shivaji University, Kolhapur

Asstt. Registrar/Deputy Registrar  
 (Post Exam.)

Shivaji University, Kolhapur

## CIVIL WORKS

PROPOSED ELEVATION DESIGN FOR DR. D.Y.PATIL. PRATISHTAN'S COLLEGE OF ENGG.  
SALOKHRNAGR, KOLHAPUR.



## LANDSCAPE WORK

PROPOSED LANDSCAPE FOR CENTRAL PLAZA IN FRONT OF MAIN BUILDING AT SHIVAJI UNIVERSITY  
CAMPUS



## INTERIOR WORK

PROPOSED INTERIOR FOR RESIDANCE OF MR. PRAMOD PATIL, HUPARI





## SKETCHUP WORK(3D VIEWS)

PROPOSED RENOVATION OF COLLECTOR OFFICE BUILDING AT KOLHAPUR.

