#### Akhil Bharatiya Maratha Shikshan Parishad's

#### ANANTRAO PAWAR COLLEGE OF ARCHITECTURE

S. No: 103, Shahu College Campus, Parvati, Pune – 411009. Office No.: 020-24219901 | 24213301





Approved by Council of Architecture, New Delhi & Govt. of Maharashtra, Affiliated to Savitribai Phule Pune University University Identification No. PU/PN/Arch / 462 /2014, Council of architecture code - MH 71, DTE code- AR6837

1.3.1

# Curricular Enhancement



ABMSP's

# ANANTRAO PAWAR COLLEGE OF ARCHITECTURE Parvati, Pune.

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### **NAAC**

### Criterion 1: CURRICULAR ASPECTS

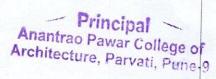
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# 1.3.1: Curriculum Enhancement

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#### S. No 1 Syllabus

2008 Landscape Architecture & Environmental Sciences
 Profession Practice (Two Terms)
 Dissertation (Research) & AP I
 Practical Training
 Dissertation (Research) & AP II

Unanities
 Climatology
 Professional Practice I
 Professional Practice II
 Elective II, III & IV
 Practical Training
 Architectural Design Project
 Research in Architecture I
 Research in Architecture II

2019 Climatology
 Environmental Science
 Elective III, IV & V
 Professional Practice
 Audit Courses – Notice, List & Course Content



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1.3.1

S. No 1
University (SPPU)
Syllabus 2008, 2015 &
2019 patterns

Subject Code : 313429		LANDSCAPE ARCHITECTU & ENVIRONMENTAL SCIE				
<b>Teaching Scheme</b>	9	Examination Scheme	Examination Scheme			
Lecture Periods 1 per week		Term I and Term II Sessional (Internal) Sessional (External) Viva	50 marks (for each term) 50 marks (for each term) Nil			
Studio Periods per week	2	Total sessional marks for both terms	100 marks			
Total Contact Periods per week	3	Paper Total Marks	Nil 100 marks	****		

#### AIM:

To introduce the students to landscape design and site planning and imbibe importance of integrated design of built & open spaces and evolve understanding of sustainable site development addressing the functional, aesthetic and environmental issues.

#### TERM 1

#### **COURSE OBJECTIVES**

- a. To introduce the students to Landscape architecture and its scope.
- b. To develop understanding of site analysis and site planning and integrated design of open and built spaces.
- c. To understand the elements and principles of landscape design and role of landscape elements in design of outdoor environments on the site.
- d. To study the changing relationship of man with nature in various parts of the world through various ages and study history of landscape design.

#### **COURSE OUTLINE**

Introduction to Landscape Design – its scope and objectives; elements and principles of landscape design and their application in outdoor space design; Site studies and site planning: Integration of built and open spaces; Introduction to storm water drainage, planting design & grading. History of landscape design.

#### TEACHING PLAN

#### Unit 1 Introduction

Introduction of landscape architecture, its scope and understanding the differences between landscape design and building design. Significance of time in landscape design.

### Unit 2 Site Studies and Site Planning

Principles of site planning. Site survey and appraisal – the physical and social context of the site and various site characteristics such as microclimate, topography, hydrology, existing features (natural and manmade), etc. Site suitability analysis. Process of developing a brief for open spaces. Design issues in site planning and siting of buildings. Integrated approach to design of building and open spaces. Introduction to grading, landform modifications and surface water drainage.

### Unit 3 Elements & Principles of Landscape Design

Elements of landscape Design – Landform, water, plants and built elements (hard areas, paths, terraces). Understanding the visual (colour, form, texture) characteristics and also the non-visual characteristics (smell, touch, sound) characteristics of these elements and their usage to achieve the functional, aesthetic and environmental goals. Principles of landscape design (harmony, balance,

### Unit 4 History of Landscape Architecture

Changing relationship of man with nature in various phases in history and its influence on the environment. Reviewing landscape design and garden design in history in various parts of the world & phases in history – Eastern (India, China, Japan), Western (Egypt, Mesopotamia, Greece, Roman, Medieval, Renaissance & Baroque, English school) and Central (Persia, Islamic landscapes). Industrialization, New towns, Need for parks, Park movement in America. Contemporary

#### SESSIONAL WORK

- 1. At least one landscape design & site development project (limited to one building on a site) in which students should evolve a rational behind design of open spaces based upon functional aspects, microclimatic analysis including building shadow analysis, visual and spatial character desired and then develop a landscape design. (60% of total marks allotted). The design should be presented in form of drawings to explain the landscape development in totality, which shall include comprehensive landscape development plan, site sections, sectional details, planting policy, views etc.
- 2. Written Assignments (40% of total marks)
- a. Unit 3 (Landscape elements): Visit to designed landscapes and preparing case study appraisal report of not less than 1000 words supported by graphics. (10% of total marks)
- b. Unit 4 (History of landscape architecture): Detailed essay of at least 1500 words with graphical illustrations based upon the topics in the syllabus on themes such as comparisons, case studies, use of landscape elements in history etc. (10% of total Marks)
- c. Test on units 1 to 4: 20% of total marks.

#### TERM 2

#### **COURSE OBJECTIVES**

- a. To evolve understanding of plant selection for functional, aesthetical and ecological applications in design based upon the plant characteristics and their habits.
- b. To introduce the concepts of sustainable site planning, components of environment and
- c. To develop understanding of the role of landscape design in evolving sustainable site planning and also in passive climatic control at building and site level.
- d. Introduction to landscape construction and services.

e. Application of the knowledge of site planning and landscape design to address the

#### **COURSE OUTLINE**

Plants and Design; Introduction to landscape construction and services (drainage, irrigation, lighting); Execution of a landscape proposal; Environment – components and issues; Environmental concerns: landscape design & sustainable site planning; landscape design in situations such as roof tops & indoor locations; role of landscape design in response to environmental issues in urban areas.

#### **TEACHING PLAN**

### Unit 5 Plants and Design

Study of plant material – trees, shrubs, ground covers and climbers, physical characteristics and habit. Role of plants in landscape design. Plant selection criteria – functional, visual, ecological and micro climatic aspects. Building shadow analysis for ascertaining hard-soft areas and choice of

### Unit 6 Landscape Construction and Services

Introduction to the landscape services – lighting, surface water drainage systems, irrigation systems. Introduction to construction in landscape – paths, retaining walls, level changes, fences, boundary walls, decks, gates, trellis, pergola etc. Introduction to landform modifications, earthworks and grading. Roof top landscapes and indoor landscapes. Understanding the process of the execution of

### Unit 7 Environment: Components and Concepts

Introduction to environment and its components (biotic and abiotic), Concepts of energy and resource conservation, bio-diversity, pollution, green house effect, ozone layer depletion, sustainability.

Unit 8 Environmental Concerns, Landscape Design and Sustainable Site Planning.

Application of the knowledge of site planning and landscape design to address the environmental issues, achieve passive climatic control and evolve sustainable site plan. Water harvesting (roof water, recharging ground water), solid waste management (vermiculture pits, composting, degradable and non-degradable wastes). Root zone treatment. Sewage treatment plant. Landscape design in response to environmental problems in urban areas.

#### SESSIONAL WORK

- 1. At least one campus planning project (with more than two buildings on the site) from the third year architectural design which the student has undertaken. A comprehensive site and landscape development plan should be submitted along with supporting background work such as site analysis, slope analysis, zoning rationale, building program analysis. Design proposal should include a comprehensive landscape development plan, Site sections, planting policies, details of civil work items such as steps, retaining wall, planters etc., surface water drainage concept. (70% of total Marks).
- 2. Written Assignments (30% of total marks)
  - a. Unit 5 (Plants and design): Study and documentation of at least four plants to understand their characteristics and use in landscapes. (10% of total marks)
  - b. Unit 7 & 8 (Environment): Literature or case study review and discussion of any one in a environmental issues pertinent to the syllabus. (10% of total marks).
  - c. Test on units 5 to 8: 10% of total marks.

#### RECOMMENDED READINGS:

1. Appleton, J. The Experience of Landscape, London: John Wiley & Sons, 1995.

2. Bose, T.K. and Choudhary, K. Tropical Garden Plants in Colour. Horticulture and Allied

- 3. **Botkin D. B. & Keller E.A**. *Environmental Science: Earth as a Living Planet*. NY: John Wiley & Co. 1995.
- 4. **Dee, C**. Form and Fabric in Landscape Architecture : A visual introduction, UK : Spon Press. 2001.
- 5. Eckbo, G. Urban Landscape Design, NY: McGraw Hill Book Company.1964.
- 6. **Gopalaswamiengar, K.S**. *Complete Gardening in India*, 4th ed. Bangalore: Gopalswamy Parthasarathy. 1991.
- 7. Jellicoe, G. & Jellicoe, S. The Landscape of Man, London: Thames and Hudson. 1991.
- 8. Kanvinde A. & H. James Miller. Campus Design in India: Experience of a Developing Nation. Jostens/American Yearbook Co, 1969.
- 9. Kaplan, R., Ryan, R. L. and Kaplan, S. With People in Mind Design and Management of Everyday Nature, Island Press. 1998.
- 10. **Laurie, M**. *An Introduction to Landscape Architecture,* NY : American Elsevier Pub.Co Inc. 1975.
- 11. Lyall S. Designing the New Landscape. UK: Thames & Hudson. 1998.
- 12. Lynch, K. Site Planning, Cambridge: The MIT Press. 1962
- 13. McHarg I. Design with Nature. NY: John Wiley & Co. 1978.
- 14. Motloch, J. L. Introduction To Landscape Design, US: John Wiley and sons. 2001.
- 15. National Building Code of India. New Delhi : Indian Standards Institution. 2005.
- 16. Randhawa M.S. Flowering Trees. New Delhi : National Book Trust. 1998.
- 17. Rutledge, A.J. Anatomy of a Park, NY: McGraw Hill Inc. 1971.
- 18. **Simonds, J.O**. Landscape Architecture: The Shaping of Man's Natural Environment, NY: McGraw Hill Book Co. Inc. 1961.
- 19. **Thompson, I. H** . *Ecology, Community And Delight: Sources Of Values In Landscape Architecture*, London: E & FN Spon.2000.
- 20. Williams, S. Outdoor recreation and the urban environment, London: Routledge. 1995.

- iii. Project based on Landscape Design, Urban Design aspects in Town Planning.
- Out of the rest excluding above three exercises any three could be taken up in rotation.
- The exercises can be group work.

4	13431 PR	OFESSIONAL PRACTIC	E (Sessional) E (Paper)
<b>Teaching Schem</b>	е	Examination Scheme	The second secon
Lecture Periods per week	2	Term I and Term II Sessional (Internal) Sessional (External) Viva	25 marks (for each term) 25 marks (for each term) nil
Studio Periods per week		Total sessional marks for both terms	100 marks
Total Contact Periods per week	2	Paper Total Marks	100 marks 200 marks

#### **OBJECTIVES:**

- To acquaint the student with the various responsibilities of an architect and understand the technicality of the profession.
- To acquaint students with avenues of professional services as well as with relevant scope, mode and conduct of architectural practice.
- To acquaint students with documentation and procedures for execution of building works/projects as well as with managerial aspects of the same.

#### **COURSE OUTLINE**

#### TERM I

- Nature of profession, difference between trade, business and profession,
- Introduction to the importance of professional organizations like I.I.A., COA & their membership.
- Architects office set up and administration, correspondence, letters, reports, taking instruction from the client, its interpretation, design process and its stages, preparation of drawing, filing, standardization and documentation.
- Office Organization, Proprietorship, Partnership, Company etc; Registration as Firm / Company etc.
- Accounts systems and Taxation.
- Detailed study of scope of comprehensive architectural services as framed under Architect's Act 1972.
- Code of Conduct, scale of professional fees as per rules and regulations framed by the Council of Architecture,
- Architectural Competition Types, procedures, as per guidelines of the Council of Architecture.
- Introduction to valuation of properties, its purpose and different methods of valuation as adopted by different organizations / bodies. Dilapidations and Easements.

#### COURSE OUTLINE

#### TERM II

- Tenders Types and procedures, selection of contractor for building work / project, prequalification of contractors, letter of Intent / "Works-order" to the Contractor.
- Articles of Agreement and Conditions of Contract. (Study of conditions stipulated by I.I.A., Pric Escalation).
- Site visit reports and instructions.

- Introduction to architectural supervision, quality control and monitoring of projects, with the help of Bat-Charts / CPM / Pert-Charts.
- · Introduction to 'Arbitration'.

#### TERM - WORK

Term-Work to comprise of the following exercise/s

Minimum three hand-written tutorials on all aspects covered in the 'Course-outline' above.

#### RECOMMENDED READINGS:

- (1) Private Architectural practice by Manrice E. Tayler
- (2) Architectural Practice and Procedure by Hamilton H. Turner.
- (3) Professional Practice in India by Madhav G. Deobhakta
- (4) Professional Practice by R. H. Namavati
- (5) Architect's Act 1972
- (6) Council of Architecture and I.I.A. Publications relevant to the 'Course-outline above'.

	10	essional)			
<b>Teaching Schem</b>	e	Examination Scheme			
Lecture Periods per week		Term I and Term II Sessional (Internal) Sessional (External) Viva	50 marks (for each term) 50 marks (for each term) nil		
Studio Periods per week	2	Total sessional marks for both terms	200 marks		
Total Contact	3	Paper	nil		
Periods per week		Total Marks	200 marks		

#### AIM:

The subject of Dissertation is included in the syllabus with the intention of introducing the students to the process of conducting systematic research in the subject of their choice but in the overall Architectural Context and acquainting them with the research methodologies adopted while carrying out research in a particular subject. The students are expected to get an orientation in Technical Writing which is an emerging field for making a career. The Dissertation is expected to impart initial training at undergraduate level so as to prepare them for more advanced research at postgraduate level.

The topic of research should relate to the "Architectural Project" that the student intends to undertake. This will help the student to extend the findings of the research to the architectural design.

#### **COURSE OBJECTIVES**

- 1. To introduce the students to research in architecture and its significance in the architectural practice.
- To introduce the students the types of research in architecture and the process of formulating, a research plan.
- 3. To introduce the students to various methods of research in architecture, their relative advantages and disadvantages and their applications.

- 4. To introduce the students to data analysis and simple statistical analysis and to interpret and infer from the data.
- 5. To introduce the students to the technical writing and presenting a research report.

#### **COURSE OUTLINE**

#### TERM I

Introduction to research in architecture – its significance, research design, types of research, literature study, methods of research in architecture (interviewing / visual methods / content analysis); data documentation and analysis, introduction to statistics, presenting the data and reporting the research.

#### **TEACHING PLAN**

The course outline has been compiled into 8 units which have to be communicated in the form of lectures to the students to achieve the objective of acquainting the students with the research methods and the process of research. The amount of time in weeks required for each unit is mentioned in parenthesis. Approximately 15 weeks are required for covering the units.

It is recommended that units 1 to 4 shall be covered in the earlier part of term I of the year. By knowledge of the methods of research and having introduced to the research design, students can undertake the research design and primary data collection after initial 8 weeks of the term. Units 5 to 8 can be covered in the earlier part of term II of the year by demonstrating these units using the data collected by the students.

#### TERM I:

Unit 1 Introduction (2 week)

Introduction to "research" and its significance in architecture – meaning of research. Relationship between design and research. Types of research in architecture, areas of research in architecture, qualitative and quantitative paradigms.

Unit 2 Research Design (2 weeks)

Components of research design – formulating the research questions, hypothesis, choosing the sample, methods of data collection, analyzing the data and inferring from the data. Concepts of dependent and independent variables, unit of analysis. Defining the scope and limitations of a research plan, significance of the research outcome. Preparing time schedule & budget for a research plan.

Unit 3 Literature Study and Research (1 week)

Significance of literature study in research, different sources of information such as books, journals, newspapers, internet, magazines, audio-recordings, etc. Referencing and documenting the bibliography.

Unit 4 Methods of Research in Architecture (3 weeks)

Interview Techniques: Questionnaires /Face to face Interviews / Internet survey. Designing a Questionnaire / Interview schedule.

Visual Techniques: Observations (participant / non-participant / direct), activity mapping, accession/erosion trace observations, cognitive maps, etc.

Content Analysis: Secondary data analysis.

Understanding the relative advantages, disadvantages and application of various methods mentioned above and choosing a method appropriate for a research to achieve its objectives.

#### TERM II:

Unit 5 Data Documentation and Analysis (2 weeks)

Understanding the nature of data collected and methods of analysis suitable for that data (graphical / numerical / descriptive). Converting data into numerical form for data analysis.

#### Unit 6 Introduction to the Statistics (3 weeks)

Introduction to the simple statistical methods of analyzing numerical data – frequencies / percentages, mean / median / mode, correlation, chi square test – inferring from the data and interpreting the meaning of those inferences. Use of MS Excel for statistical data analysis.

#### Unit 7 Presentation of the Data (1 week)

Techniques of presenting the numerical data – graphical (pie charts, bar charts, line graphs etc.), tabulations, verbal qualitative data, architectural drawings / maps.

#### Unit 8 Reporting the Research (1 week)

Different sections of a research report, technical writing and language (tense, voice, etc.), formatting of a report.

#### SESSIONAL WORK

- A Class test based upon the units 1 to 4. (20 % of total marks) to be conducted at the end of term I.
- Writing a review essay of about 1000 words on any one book / part of a book (chapter) related to architecture, read by the student. (10% of total marks) in term I.
- 3. Undertaking research on a topic (for Architectural Project approved by the University of Pune).
  - a. Approach to research, research design (20% of total marks)
  - b. Field work (data collection) and Analysis of the data (20% of total marks)
  - c. Report writing and presentation (30% of total marks).

Phases (a) above can be assessed in term I while phases (b) & (c) above, will be essentially assessed in the term II.

#### SUBMISSION, CHAPTERS AND FORMAT OF THE REPORT (Architectural Project Part I):

Candidates must submit three copies of the report duly signed and endorsed by the Principal and the Guide to their respective colleges. Following is a brief guideline for the sections / chapters in the report and the formatting of the report.

- 1. The report will have three main parts:
  - a. Initial Pages -in the following sequence.
    - i. Title Page
    - ii. Certificate from the College
    - iii. Acknowledgement
    - iv. Table of Contents
    - v. List of figures, photos, drawings, tables.
    - vi. List of abbreviations
  - b. Main body of the report (not to exceed 4000 words).
    - i. Introduction
    - ii. Literature review
    - iii. Methodology
    - iv. Data Analysis and Findings
    - v. Conclusions and Discussions
    - vi. Recommendations / Design Guidelines
    - vii. Glossary
  - c. Appendices
- 2. Formatting of the report
  - a. The report shall be presented in A4 Portrait form using executive bond paper.
  - b. The font to be used shall be either Bookman Old Style or Times News Roman.
  - c. CHAPTER TITLES: 16 point upper case bold, Sub-headings: 14 point title case bold and overall text shall be in 12 point sentence case.
  - d. Line Spacing shall be 1.5 lines.

Principal

Anantrao Pawar College of

Architecture, Parvati, Pune-9

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- e. Page numbers shall be given at the bottom centre of a page. The initial pages (as in 1 above) should have roman small numerals (i, ii, iii etc.) while the body of the report and appendices shall have English numerals (1,2,3 etc.)
- f. Margins: Left Margin 40mm (1.5 Inch approx) All other margins 25mm (1 Inch approx).
- g. Report shall be typed on one side of the page.
- h. Black binding with Golden Embossing.
- i. Standard conventions for giving references, writing bibliography, annotating figures /tables shall be followed.

#### RECOMMENDATIONS

Topic for Research : The topic of research should be related to the "Architectural Project" that the student intends to undertake. This will help the student to extend the findings of the research to the architectural design. In this manner, the effort for dissertation would become focused, directional and relevant. The choice of subject shall depend upon many factors such as student's personal interest, circumstances and abilities. A careful check shall be made to see that access is available to relevant buildings and to appropriate libraries, record offices, laboratories and other technical resources. Thought must be given to any travel, and field trips, which may be necessary.

Thus coordination between "Dissertation" and "Architectural Project" at the college level is very essential and an over view meeting with the students should be arranged at the end of the third year B.Arch. Depending upon the philosophy of a particular college, the college may allow topics focusing upon a particular area related to their mission statement.

Following is a list of some Building Types for reference.

1. Housing

Individual or Group Housing Schemes.

2. Transportation Projects

Railway stations, City / Interstate Bus Terminus / Domestic and International Air Ports.

3. Cultural, Educational Projects

Display oriented topics like Museums, Art Galleries, and Theatres for Performing Arts such as Drama, Dance and Music. University and College campuses, Libraries etc.

4. Sports Recreation and Tourism oriented topics

Stadium, Gymnasium, Swimming Pool, Students Recreation Centers, Clubs, Tourist Resorts, Holiday Homes, Motels, Conference Centers etc.

5. Administrative and Civic Buildings

Private and Government Offices, work centers, Town Halls, Police Headquarters, Law Courts etc.

6. Industrial Projects

Factories, Specialised Production Centers such as Pharma Industry, IT Parks and related types of building

Technical and Specialized topics such as Hospitals, Clinics, Film and T. V. Studios, 7. Cost and Structure oriented topics such as cost effective technologies, Energy efficient building design, Pre fabricated and Industrialized Construction etc.

Guide: The guides for the dissertation should have minimum 5 yrs. of teaching experience as full time faculty member at an architecture college or shall be a visiting faculty member / practitioner with at least 10 yrs experience. Preferably, a guide should not guide more than 8 students for the dissertation.

The dissertation coordinator at a college, should deliver research methods lectures and at times call experts from the field of architecture to review students' work, experts from other fields to give special inputs such as technical writing, statistical methods etc.

#### RECOMMENDED BOOKS

- Babbie, E. The Practice of Social Research, (third edition). Belmont: Wadsworth Publishing Co. 1983.
- Creswell, J. W. Research Design: Qualitaitve, quantitative and mixed methods approaches, 2nd Ed., Thousand Oaks: Sage. 2003.
- Creswell, J.W. Research Design: Qualitative & Quantitative Approaches. Thousand Oaks: Sage. 1994.
- 4. De Vaus, D. A. Surveys in Social Research, Jaipur: Rawat Publications. 2003.
- Dey, I. Qualitative Data Analysis: A User Friendly Guide for Social Scientists, London: Routledge. 1993.
- 6. Groat, L. & Wang, D. Architectural Research Methods, NY: John Wiley and Sons Inc. 2002.
- 7. Kothari, C.R. Research Methodology: Methods and Techniques, New Delhi: Wishwa Prakashan. 2005.
- 8. Nachmias, C. F. and Nachmias, D. Research Methods in the Social Sciences, 5th Edition Great Britain: St. Martin's Press Inc. 1996.
- 9. Norman K Denzin and Yvonna S Lincoln (Eds.) Handbook of Qualitative Research, Thousand Oaks : Sage Publications, pp. 377-392. 1994.
- 10. Patton, M. Q. Qualitative Evaluation Methods, Newsbury Park: Sage Publications. 1980.
- Sanoff, H. Methods of Architectural Programming, Dowden Hutchinson and Ross, Inc. Vol. 29, Community Development Series. 1977.
- 12. Sanoff, H. Visual research methods in design, USA: Van Nostrand Reinhold. 1991.
- 13. Silverman, D. Interpreting Qualitative Data: Methods for Analysing Talk, Text and Interaction, London: Sage Publication. 1993.
- William Michelson (ed.) Behavioral Methods in Environmental Design, Stroudsberg, Pennylvania: Dowden Hutchinson and Ross. Inc. 1982.

#### FIFTH YEAR B.ARCH.

#### **DETAIL SYLLABUS**

Subject Code: 513	421 PRAC	TICAL TRAINING (Sessional and V	iva)	100	
<b>Teaching Scheme</b>		<b>Examination Scheme</b>			
Lecture Periods		Term I Only			
per week		Sessional (Internal)	25 marks (for Term I)	Seri.	
Studio Periods per week	-	Sessional (External)	25 marks (for Term I)		
		Viva	50 marks (for Term I)		
Total Contact Periods per week	-	Total sessional marks for Term I Only	100 marks	40	
		Paper	nil		
		Total Marks	100 marks		

#### AIMS AND OBJECTIVE

The aim of introducing one complete term for the students to undergo practical training is to expose them to the world of Professional Practice and get hands on training under the guidance of a professional who is actively engaged in Architectural Practice. It sill give the students first hand experience of dealing with live projects of various nature and also the site experience to see how the projects get built on the site. The students will also be able to learn about the Office Management, Project Management, Contract Management, Human Resource Management, new techniques of construction, advance building services, landscape and environmental designing etc. This rich experience is expected to enhance the students' ability to think comprehensively and better prepare them for undertaking the Architectural Project work in the final semester.

#### **COURSE OUTLINE**

- The term of Practical Training will commence immediately after the examination of Fourth Year and will continue till the end of IX SEM or thereabout. The students are expected to work in the organization where architecture and its related practice are carried out and under the guidance of the professional who is registered with Council of Architecture. In case the student opts to go abroad he / she will work under the guidance of the professional who is registered with the council / any other organization controlling the profession of Architecture in the respective country. The students will decide very carefully about their placement venue as it is expected that they learn best ethics in Professional Practice and which produces quality architecture. The placement cell of each College will extend all possible help to the students in this regard.
- 2 The total duration of the training will be minimum 18 working weeks / 90 working day excluding the holidays.

#### **SUBMISSION**

- 1. The students shall prepare an exhaustive Training Report separately or in a formal Log Book issued to him by the College as per the College policy, week by week, which will cover detailed record of the work done in the office, site visit reports, interviews with clients and any other agency, interaction with principal architect etc. The professional with the seal of the organization, under whose guidance the student worked, will sign the report and also his reflection about the student's work and his overall approach and attitude towards the office work.
- 2. The students shall produce the above mentioned Training Report and the Log Book at the time of viva-voce examination. He will also produce few drawings with the permission of his employer to indicate the kind of work he has carried out.

**SESSIONAL ASSESSMENT AND VIVA-VOCE:** The sessional and viva assessment shall be done jointly by the Internal and External Examiners and the allocation of marks shall be as stipulated in the syllabus



Subject Code: 513422 ARCHITECTURAL PROJECT (PART II) (Sessional and Viva)

<b>Teaching Scheme</b>		<b>Examination Scheme</b>	*
Lecture Periods	2	Term II	
per week		Sessional (Internal)	150 marks (for Term II)
Studio Periods	10	Sessional (External)	150 marks (for Term II)
per week		Viva	100 marks
		Total sessional marks	400 marks
		for both terms	
Total Contact	12	Paper	nil
Periods per week		Total Marks	400 marks

#### **OBJECTIVE**

To expose and to provide opportunity to the students to extend the findings of the research carried out under the subject of "Dissertation" to the architectural project and exercise full-fledged large scale Architectural Design with holistic approach including site investigation, programme formulation, and design demonstration.

#### **COURSE OUTLINE**

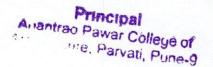
The architectural project(Part II) shall consist of: **Design Demonstration i.e.** Formulation of Design Programme, Site investigation, and selection, and culmination in a concrete design demonstration.

#### SUBMISSION WORK:

Sessional work for the Part II of Architectural Project shall consist of a **Design Solution**: Graphically presented Design solution in from of sufficient number of architectural drawings, (manually drawn/computerized) with models etc. Since the Architectural Project is the culmination of five years of learning in various aspects of Architecture, it is expected that students demonstrates an ability of holistic and comprehensive thinking in the areas of,

- Site Planning
- Structural considerations
- Interior space planning
- Environmental planning
- Building Services
- Climate responsive, Energy efficient and exhibiting qualities of sustainable architecture.
- Architectural Detailing.

The portfolio will consist of drawings sufficiently in detail to demonstrate the consideration given to the above-mentioned attributes of a good quality Architectural Project. Emphasis shall be given to the preparation of self-explanatory drawings in great detail, as if in any Architectural Competition.



#### SESSIONAL ASSESSMENT

The Internal assessment of "Architectural Project" shall be carried out STAGE WISE as decided by the individual College.

The final assessment in the examination shall be done by both Internal and External Examiner / s in which the student will display his work on the space allotted to him and explain his work and answer all the queries raised by the Examiners.

The Time allotted per student shall be minimum 30 minutes to maximum 45 minutes. The Internal stage wise making shall be done out of 150 marks and External marking shall be done jointly by the External Examiner/s out of 150 marks. 100 marks shall be reserved for oral presentation to be assessed jointly by both Internal and External Examiners.

The individual college will make available Guides specializing in various disciplines who will make themselves available to the students in College premises on pre appointed days and time.

Individual Guide will guide maximum of **FIVE STUDENTS** of a particular College in which he is working as a Guide. Total number of students from all the Colleges shall not exceed **EIGHT** at any one time.

In order to qualify to work as a Guide the teacher / professional must possess minimum of **FIVE YEARS** of teaching / professional experience. Efforts shall be made to appoint guides who have high academic qualification, having rich Professional experience and contributed in a major way to the field of Architectural Education / Profession.

#### RECOMMENDED READING

All books relevant to the topic of the architectural project.

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- Sessional work should be planned to cover all the units mentioned in course outline with thrust on skill development, accuracy and understanding of the topic.
- Twenty five percent weightage in assessment should be given to the assignments of sketching
- Minimum of Eight manually drafted assignments to cover the course outline based on the following modules:

а	Architectural scales and annotations	2 to 3 Assignments	
b	Orthographic (plan, section/s, elevation/s) isometric, axonometric projections of three dimensional objects and building components		
С	Scale drawing of building/s of sufficient size to demonstrate basic building components, standard annotations.	1 to 2 Assignments	

#### RECOMMENDED READINGS

- 1. Ching Francis D.K.: Architectural Graphics
- 2. Kelsey W. E.: Geometrical & Building Drawing
- 3. Leslie Martin: Architectural graphics:
- 4. B. James: Essential of Drafting
- 5. H. Joseph and Morris: Practical plane and solid geometry
- 6. Gill Robert: Rendering with pen and ink
- 7. Burden Ernest: Architectural Delineation

#### HUMANITIES

HUMANITIES			
Subject Code		1201506	
Teaching Scheme		Examination Scheme	
Total Contact Periods per week (lectures=2	3	Sessional (Internal) Sessional (External) Viva (Internal) Viva (External)	25 25 NIL NIL
Studio=1)		In semester exam  End Semester exam	NIL NIL
I MANAGEMENT OF THE STATE OF TH		Total Marks	50
		Total Credits	2

#### COURSE OBJECTIVE

 To introduce the students to the study of humanities and its importance in understanding of human settlements and architecture.

#### COURSE OUTLINE

- To introduce the disciplines of study such as anthropology, sociology, linguistics, philosophy, history, political science and understand their connection with understanding of architecture.
- To introduce the students to the aspects of human society, civilisation and culture.

#### SESSIONAL WORK

• The sessional work shall comprise of minimum one tutorial and two assignments.

#### RECOMMENDED READINGS

- 1. History of World Civilizations by J.E. Swain.
- 2. A Short History of the World H.G.Wells

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- 4. Indian Architecture (Vol. I & II) by Percy Brown.
- 5. History of Indian and Eastern Architecture by James Fergusson.
- 6. Hindu India by Henry Stierlin.
- 7. Islamic Architecture in India by Satish Grover.
- 8. The History of Architecture in India by Christopher Tadgell.
- 9. A History of Fine Arts in India and West by Edith Tomory.

#### CLIMATOLOGY

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CLIMATOLOGY			
Subject Code		1201515	
Teaching Scheme		Examination Scheme	
Total Contact Periods per week (lectures=2 Studio=1)	3	Sessional (Internal) Sessional (External) Viva (Internal) Viva (External) In semester exam	25 25 NIL NIL
		End Semester exam	NIL
		Total Marks	50
		Total Credits	2

#### COURSE OBJECTIVES:

To understand climate as a determinant of architectural design and to enable the students to evolve climate responsive design.

#### **COURSE OUTLINE**

- Introduction to elements of nature, variables of climate (definitions, measurement and significance).
- Global climate, regional variations and microclimate.
- Climatic zones in India and respective traditional climate responsive architecture.
- Concept of heat exchange in buildings. Theory and concept of thermal comfort, comfort indices and its application to architectural design.
- Climate responsive design strategies like site planning, orientation, building form, shading, ventilation, materials and technology.

#### SESSIONAL WORK

- One individual design assignment related to design of openings with respect to their size, location, shading and ventilation.
- One individual study assignment each based on climatic responsive building from traditional and contemporary architecture.

#### RECOMMENDED READINGS

- 1. Climatology Fundamentals and application John R Mather
- Introduction to Climatology Anthony Sealey.
- 3. Climatologically & Solar data for India T. N. Seshadry.
- 4. Climatic Design Watson Donald.
- 5. Manual of tropical housing and building Koenigsberger & Ingersol
- 6. Tropical Architecture Maxwell Fry & Jane Drew
- 7. Design Primer for Hot Climate Allan Konya
- 8. Sun, Wind and Light by G. Z. Brown.
- 9. Energy Efficient Housing by Mili Majumadar, Published by TERI.
- 10. Climatically Responsible Energy Efficient Architecture by Arvindkrishnan.

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#### **COURSE OBJECTIVES:**

• To introduce advanced structural systems, materials and services required in buildings with complex and special requirements and enable the students to integrate the same in design.

#### COURSE OUTLINE:

Unit 1 .Multi-basements. Design and construction of multi-basements giving constructional details required for natural Lighting, ventilation and surface water disposal. Study of various methods of access to parking areas other than ramps. Drawings to include application of all required services. [Minimum four A1 drawings]

Unit 2. Industrial Buildings. : Types of roofing systems, PEB systems, Proprietary systems, Industrial flooring.

Assignments. Drawings showing structural system, construction details and services in plan, section and elevation [minimum two A1 drawings]

• Unit 3. Swimming pools.

Design and construction of swimming pools (Olympic size, semi Olympic, leisure pools) and study of situations such as -- at ground level, podium level and upper / roof level with reference to all constructional and services details. [Minimum two A1 drawings]

 Unit 4 Study of long span structures [indoor stadia, railway / metro stations, shopping malls, sky walks etc] in RCC and Steel to understand structural behavior. Introduction of lighting and ventilation of spaces in such large buildings.
 Assignment would comprise of Case study report and construction details in sketch form.

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 Drawings / sketches / notes to be as mentioned in the course outline above. Computerized drawings may be allowed only when individual design / detailing is undertaken.

#### REFERENCE BOOKS

PEB manufacturer's details Advanced Building Construction By MACKEY Stadia by John Geraint

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PROFESSIONAL PRACTIC Subject Code :		4201556(PP)	
Teaching Scheme		Examination Scheme	
Total Contact Periods per	03	Sessional (Internal) Sessional (External)	Nil Nil
week = 3 (Theory Lectures – 1 + studio		In-semester exam	30
-2)		End Semester exam	70
		Total Marks	100
		Total Credits	2

#### COURSE OBJECTIVES:

 To acquaint the Student with the Role and Stature of an Architect in duties, responsibilities, liabilities and ethics as a professional.

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- To acquaint the Student with the Scope and Avenues of professional Architectural services, and the demands and Mode of professional practice, and to prepare the Student for the professional field.
- To familiarize and prepare the Student with adequate knowledge of an Architect's office administration, documentation and procedures of office and site management to enhance his comprehension and utility during his professional training in the field in Semester IX.

#### COURSE OUTLINE:

- Unit 1 Introduction to the nature, scope and avenues of service and professional practice as an Architect.

  Define the Role of an Architect as a technical professional who is not a Trader or a Businessman.

  Illustrate the changing nature of the Architects profession- Local & Global competition in the field.
- UNIT 2 The Architects Act 1972 The Council of Architecture, its composition, legal status and mandate for to Registration of Architects and for monitoring the Academics and Profession of Architecture, Rules and Regulations of the Council regarding Professional Liabilities & Code of Conduct.
- Unit 3 Avenues of Professional service and mode and nature of professional Practice Types of Organisations Scope of comprehensive Services, Scale of Fees, and Office Management, Project management, Site supervision, Documentation, Taxation, Banking and Insurance.
- Unit 4 Architectural Competitions Pros and Cons with Rules and Regulations of the Council.
- Unit 5 Introduction to IIA, IIID, IUDI, ITPI, ISOLA and such professional organisations and the need for Architects to be aware, sensitive and active in Social and Civic issues in Urban context.

#### REFERENCE BOOKS:

1) Handbook of Professional Documents 2) The Architects Act, 1972 3) Professional Practice In India 4) Architectural Practice and Procedure	- Council of Architecture publication - Govt. of India publication - By Roshan H. Namavati - By Madhav G. Deobhakta - By Vasant .S. Apte
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URBAN STUDIES-I			
Subject Code		4201557 (SS)	
Teaching Scheme		Examination Scheme	
Total Contact Periods per week (lectures=1, Studio=2)	03	Sessional (Internal) Sessional (External) Viva (Internal) In-semester exam	25 25 nil nil
		End Semester exam	nil
		Total Marks	50
		Total Credits	02

#### COURSE OBJECTIVES:

- To enable students to understand the urban context of an Architectural Project beyond the site and understand the implications of various factors (such as traffic-transportation, socioeconomics, urban landscape, spatial and visual aspects etc) influencing the development of an urban area.
- To introduce the students to urban planning and design theories and concepts and enable them to undertake planning and design of large scale land development.

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Drawings / sketches / notes to be as mentioned in the course outline above. Computerized drawings may be allowed only when individual design / detailing is undertaken.

#### REFERENCE BOOKS

Advance building construction by MACKEY High Rise Buildings by JASWANT MEHTA Theatres and Auditoriums by Harold Burris- Meyer & Edward Cole. Architects Working Details

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PROFESSIONAL PRACTICE II Subject Code :		4201564 (PP)		
Teaching Scheme		Examination Scheme		
Total Contact Periods per week = 3 [Lecture 1, Studio 2]		Sessional (Internal) Sessional (External)	Nil Nil	
	3	In-semester exam 30 End Semester exam 70	30	
			70	
		Total Marks	100	
		Total Credits	2	

#### COURSE OBJECTIVES:

To acquaint the Student with the Role and Stature of an Architect in Society, and understand the duties, responsibilities, liabilities and ethics as a professional. To acquaint the Student with the Scope and Avenues of professional Architectural services, and the demands and Mode of professional practice, and to prepare the Student for the professional field.

To familiarize and prepare the Student with adequate knowledge of an Architect's office administration, documentation and procedures of office and site management to enhance his comprehension and utility during his professional training in the field in Semester IX.

#### COURSE OUTLINE:

- Unit 1 Introduction to Construction Management Types and Systems of Tendering Open and Invited Tenders - Pre-Qualification and Empanelment procedures - Selection of Contractors.
- Unit 2 Introduction to Contracts Articles of Agreement and Conditions of Contract (IIA document) Contents of a Tender - Terms of Reference - Specifications - Bill of Quantities - Billing, Measurement of work and Payments - Advances and recovery - Bonus and Penalties, etc...
- Unit 3 Introduction to National Building Code ISI Codes and Standards, Limits and Tolerances.
- Unit 4 Role of Architects in Construction / Site management Supervision and monitoring of Speed, Quality and Economy - Status on project sites - Meetings, Minutes, Instructions & Records.
- Unit 5 General Introduction to the Role and Legal duties of Architects in Arbitration and Valuation.

SESSIONAL WORK: Preparation of a JOURNAL with NOTES based upon the syllabus content. Journal to e be submitted at the end of Term-II for Internal and External Marking.

#### REFERENCE BOOKS:

Handbook of Professional Documents 1) 2)

The Architects Act, 1972

- Council of Architecture publication

- Govt. of India publication

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- Professional Practice
- 4) Professional Practice in India
- Architectural Practice and Procedure
- By Roshan H. Namavati
- By Madhav G. Deobhakta
- By Vasant .S. Apte

SubjectCode		4201565 (SS)	
TeachingScheme		ExaminationScheme	
TotalContact Periodsperweek (lectures=1, Studio=2)	03	Sessional(Internal) Sessional(External ) Viva (Internal) Viva (External) In-semester exam	25 25 nil nil
		End Semester exam	nil
		TotalMarks	50
		Total Credits	02

#### COURSE OBJECTIVES:

- To introduce the students to the process of planning and urban development and associated legislation.
- To introduce the students to urban economics.

#### COURSE OUTLINE:

- Study of planning process in detail (Survey, analysis, proposals and development)
- Conservation and related Urban Design controls. Planning and Urban Design legislation-introduction and relevance
  - Unified Building bye laws and Development Control rules of local authorities.
  - Urban economics: introduction and concepts (demand and supply, housing finance, Government schemes and various bodies etc)

#### SESSIONAL WORK:

- Handwritten journal based upon the theory syllabus as above.
- Assignments:
  - 1. Reading of Urban fabric: Study of existing town and town planning proposals for municipal council level town-(group work) (20 marks)
  - 2. Identification of urban issues related to various aspects such as environment, society, traffic and transportation, hills and hill slopes, riverfront development, urban heritage conservation through primary surveys( group work in a group of 5 students) (20 marks)
  - One Tutorial based upon course outline (10 marks)

#### REFERENCE BOOKS

Urban Pattern: Arthur Gallion City in History: Lewis Mumford

Spreriegen, Paul. Urban Design: The Architecture of Town and Cities. Malabar, FL-USAKrieger

Publishing Co., 1967

Lynch, Kevin. The Image of The City London: The MIT Press, 1960

Book of Development Control Regulations by Local Municipal Corporation (latest edition available)

Book of AITP Exam study material: 'Planning Law and Legislation' by ITPI New Delhi Guide to Planning Surveys including Landuse Classification: TCPO, Govt of India: 2004

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Subject Code Teaching Scheme		4201561(SS)	
		Examination Scheme	
Total Contact Periods per week= 2 (lectures=1,	2	Sessional (Internal) Sessional (External) Viva (Internal) Viva (External) In-semester exam	25 25 NIL NIL
Studio=1)	2	End Semester exam Total Marks	nil 50
		Total Credits	1

#### **COURSE OBJECTIVES:**

The subject of Electives has been introduced in syllabus with specific intention of study of a particular subject of student's liking in greater detail but in the larger context of overall scope of Architecture syllabus at undergraduate level. This will give students an opportunity to develop their skills in a subject they may opt, to make their career in future.

The Design and technology elective aims at exploring the recent developments in the field of architecture from point of view of building design, services and construction. Aspects such as disaster resistance, accessibility, retrofitting, conservation, architectural design theory, can be addressed through these electives.

DRAFT SYLLABUS FOR APPROVAL OF FACULTY

Individual College may offer topics depending upon the availability of experts and resource material. The colleges will have the opportunity to focus on a particular group of topics according to the overall philosophy and mission statement of the College. The probable elective topics are – [the list is only suggestive and individual colleges can frame newer topics which meet the course objectives].

- Universal Design
- Seismic Resistance design
- Services in High rise buildings.
- Design theory
- Architectural Conservation
- Computer & design
- Modular design
- Prefabricated & Precast construction
- Advanced Landscape Design

Note: The topics selected in this elective should not focus on any of the aspects of interior design.

#### SESSIONAL WORK:

The faculty is expected to set out the broad contour and sub aspects of the particular elective and conduct input and demonstration interactions and define the nature of the sessional work to be done by the students.

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#### Unit III: Building Trades

3.1. Different Building trades scope & contents

#### Unit IV: Broad outline specification for service installations

- 4.4. Communication systems- elevators, escalators
- 4.5. Accessibility- arrangements for disabled persons
- 4.6. Water proofing- cement, bitumen, polymer based
- 4.7. External development- roads, pavements, kerbs, lighting

#### REFERENCE BOOKS

- · Indian Standard specifications
- C.P.W.D. Specifications and schedule of rates
- Specification Writing for Architects & Engineers, By Donald A. Watson
- Specification Writing for Architects & Surveyors, By Arthur J. Wills
- Estimating, Costing, Specification & Valuation, By M. Chakraborty

ELECTIVE III - ALLIED ELE	CTIVE		
Subject Code	4201569 (SS)		
Teaching Scheme	Examination Scheme	20 5 7 B 5 C	
Total Contact Periods per week= 2	Sessional (Internal) Sessional (External) Viva (Internal) Viva (External)	25/AL O NIL NIL	F FACULTY
(lectures=1, Studio=1)	In-semester exam	nil	
	End Semester exam	nil	
	Total Marks	50	
	Total Credits	1	

#### COURSE OBJECTIVES:

The subject of Electives has been introduced in syllabus with specific intention of study of a particular subject of student's liking in greater detail but in the larger context of overall scope of Architecture syllabus at undergraduate level. This will give students an opportunity to develop their skills in a subject they may opt, to make their career in future.

The allied elective gives opportunity to the students to explore links of design as a faculty with allied fields such as social sciences, visual art, performing arts, psychology, etc.

#### COURSE OUTLINE:

Individual College may offer topics depending upon the availability of experts and resource material. The colleges will have the opportunity to focus on a particular group of topics according to the overall philosophy and mission statement of the College. The probable elective topics are

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is only suggestive and individual colleges can frame newer topics which meet the course objectives].

- Music and Architecture
- Environmental psychology
- · Art movements and Architecture
- Sociology and Architecture
- Building Economics
- Biomimicry

#### SESSIONAL WORK:

The faculty is expected to set out the broad contour and sub aspects of the particular elective and conduct input and demonstration interactions and define the nature of the sessional work to be done by the students.

The students are expected to present the work done in anA4 report format of 20 pages, to include summary of interactions and sessional work prescribed by the faculty with a signed certificate from the concerned Teacher / Expert stating that the study was carried out under his /her guidance and countersigned by the Principal / Academic coordinator.

# DRAFT SYLLABUS FOR APPROVAL OF FACULTY



Practical Training		
Subject Code	5201570 (SV)	
Teaching Scheme	Examination Scheme	
Student should work for Total 120 working days in organization where architecture or its allied disciplines are practiced unde	Vivo (External)	75 75 25 25
supervision of a professional who is registered with COA India.	In-semester exam	NIL
	End Semester exam	NIL
	Total Marks	200
	Total Credits	8

#### Objectives:

- To undertake practical training under the guidance of experts / professionals.
- To Learn about architect's office management and learn about the process of design, execution and management of a project.

#### Course outline:

- Students should work in organization where architecture or its allied disciplines are carried under professional who is registered architect with COA
- In case a student undergoes Training at a firm outside India, the professional should be registered
  with the professional body governing practice in that country in addition to the registration with
  COA India.
  - Total duration of Professional Training will be 120 working days in IX sem

#### Submissions:

- Prepare a separate report along with formal log book & work diary.
- Student should maintain week wise work record in a diary to summarize the work done in the office, site visits, meetings with clients, agencies, interaction with principal architect. This diary should be authenticated by the architect every week.
- Professionals should issue a certificate of performance to the student with respect to the work
  quality, overall approach, attitude towards office work.
- Students should produce report, log book, work diary & some drawings with permission from the
  employer [to indicate the kind of work s/he has carried out] at the time of sessional -viva voce
  examination.

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SubjectCode TeachingScheme		5201572 (SS) ExaminationScheme	
(lectures=1, Studio=2)	3	In-semester exam	nil
		End Semester exam	nil
		TotalMarks	50
		Total Credits	2

#### COURSE OBJECTIVES:

The subject of Electives has been introduced in syllabus with specific intention of study of a particular subject of student's liking in greater detail but in the larger context of overall scope of Architecture syllabus at undergraduate level. This will give students an opportunity to develop their skills in a subject they may opt, to make their career in future.

Architecture professionals will have to deal with more and more complex buildings as well as organizational structures to realize a project. Architects need to be introduced to "Management Concepts" if they are to manage projects right from design stage through the documentation and construction stage. Acknowledging the fact that the Architectural Practice is a team effort and understanding the necessity of management in this field, the following elective topics have been suggested.

Note: This elective will not focus on design and technology aspects of the topics offered.

#### **COURSE OUTLINE:**

Individual College may offer topics depending upon the availability of experts and resource material. The colleges will have the opportunity to focus on a particular group of topics according to the overall philosophy and mission statement of the College. The probable management elective topics are as follows:

- Project Management
- Construction Management
- Environment and Energy management
- Architectural Design Management

#### SESSIONAL WORK:

The faculty is expected to set out the broad contour and sub aspects (including basic principles case studies, application in building projects etc.) of the particular elective and conduct input and demonstration interactions and define the nature of the sessional work to be done by the students.

The students are expected to present the work done in anA4 report format of 20 pages, to include summers of interactions and sessional work prescribed by the faculty with a signed certificate from the concerned

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Teacher / Expert stating that the study was carried out under his /her guidance and countersigned by the Principal / Academic coordinator.

#### Guidelines for content for the electives

#### **Construction Management**

Human Resource Management in Construction

Contracts and Claims Management

Construction Materials, Stores and Inventory Control and Technology Management

Construction Equipment Management

Construction Quality and Safety Management

Construction Site Administration and Control

Introduction to Computer applications for construction management

#### **Project Management**

Soft Skills in Project Management

Project Risk Management

Project Cost Estimation and Cost Control

Contracts and Claims Management

Project Procurement and Materials Management

Project Quality and Safety Management

Introduction to Computer Application in Contract Management

# DRAFT SVIJARIS FOR APPROVAL OF FACULTY

Environment and Energy Policies and Management in Indian Context
Environment Technology Management-Water and Waste Management Technologies
Energy Management in Buildings (Demand and Supply Management)
Building Management Systems

#### Architectural Design Management

Design Management
Drawing and Documentation Management
Computer Applications for Design Management

SubjectCode		5201571 (SV)	
TeachingScheme		ExaminationScheme	
TotalConta <b>ct</b> Periodsperweek=20	20	Sessional(Internal) Sessional(External) Viva (Internal) Viva (External)	175 175 50 50
(lectures=4, Studio=16)	20	In-semester exam	nil
		End Semester exam	nil
		TotalMarks	450
		Total Credits	12



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**OBJECTIVE:** To provide an opportunity to the students to apply the knowledge gained in earlier years to full-fledged Architectural Design project of student's choice with a holistic approach including background research, programme formulation, site selection investigations and design demonstration.

**COURSE OUTLINE:** The Architectural Design Project shall consist of Design Demonstration i.e. formulation of design programme, site investigation and selection, and culmination in architectural design proposal.

TOPIC FOR ARCHITECTURAL PROJECT: The topic for the project shall be approved by the Institute and guided by the Faculty. The student may consult external resource persons specializing in the chosen topic but the assessment shall be done by the faculty. A guide may guide upto EIGHT students during the session. In order to qualify to work as a Guide, the faculty must possess minimum of ten YEARS of teaching / professional experience.

#### **SESSIONAL WORK:**

The portfolio of the work submitted by the student shall contain MANUALLY LABOURED / COMPUTER GENERATED drawings of sheet sizes as per international standards and a PHYSICAL MODEL explaining the architectural proposal. Alongwith the drawings A4/A3 size report consisting of the background and rationale of the project, the methodology and the prints of the final proposal shall be submitted after the oral examination, to be kept in the library of the college. The choice of the size of the report is left to the institute, however, within one institute report size should be constant.

In addition the student may show other presentations like 3D views, walkthroughs etc. if permitted by the examiners.

## SESSIONAL ASSESSMENT LABUS FOR APPROVAL OF FACULTY

The Internal assessment of architectural project shall be carried out STAGE WISE as decided by the college. The final assessment in the examination shall be done by both Internal and External examiner in which the student shall display the work on the space allotted to him/her and explain his work and answer all the queries raised by the examiner.

The examiners shall assess the work done and presented by the student, duly approved by the Faculty. The drawings and models, duly stamped and signed by the Faculty shall be treated as authentic work done by the student under the guidance of the Faculty. The student may submit sufficient number of drawings required to satisfactorily explain the project. The student shall also present a separate portfolio of study & process sheets, study models etc.

**ORAL EXAMINATION**: The oral shall be held in the physical presence of the student in **examination centre of** the candidate jointly by the internal and external examiners. The student shall be allowed to present his project for minimum 10 minutes without any interruption. The student shall be judged for the depth of understanding of the subject and clarity of graphical presentation of the project.

#### **RECOMMENDED READING:**

All books relevant to the topic of the architectural project.

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#### **COURSE OUTLINE:**

- Introduction to urban studies and relevance of its learning in Architecture profession. Principles and theories of Urban Planning and Urban Design.
- Various aspects of urban land.
- Urban residential developments such as neighborhood planning, high-rise housing, slum rehabilitation, public housing, town planning schemes etc
- Affordable housing: introduction and concepts.

#### **SESSIONAL WORK:**

- Handwritten journal based upon the theory syllabus as above.
- · Assignments:
  - Subdivision of land for residential development (approx area 4Ha) –Individual submission (20 marks)
  - 2. Study of housing typologies as mentioned in course outline- Case study in a group of maximum 5 students (20 Marks)
  - 3. One Tutorial based upon course outline (10 marks)

#### REFERENCE BOOKS

- 1. Gallion, Arthur. The Urban Pattern. New Delhi: CBS Publishers and Disrtibuters, 2003
- 2. Bacon, Edmund. Design of Cities London: Thames and Hudson, 1974
- 3. Paddison, Ronan. Handbook of Urban Studies. London: sage Publications, 2001
- 4. Correa, Charles. Housing and Urbanisation. London: Thames and Hudson, 2000.
- 5. Mohanty, Swati. Slum in India. New Delhi: APH Publishing Corp., 2005.

# DRAFT SYLLABUS FOR APPROVAL OF FACULTY

<b>RESEARCH IN ARCHITE</b>	CTUR	514		
Subject Code		4201558 (SS)		
Teaching Scheme		Examination Scheme		
Total Contact Periods per week (lectures=1, Studio=2)	3	Sessional (Internal) Sessional (External) Viva (Internal) Viva (External) In-semester exam	25 25 - - nil	
		End Semester exam	nil	
		Total Marks	50	
		Total Credits	2	

#### COURSE OBJECTIVES:

- · To introduce students to Research in Architecture and its value in design
- To enable the students to prepare a research proposal.

#### COURSE OUTLINE:

- Unit I -- Introduction to the meaning and need of research in architecture. Introduction to various concepts such as types of variables, measurement of variables, sample selection, ethics in research.
- Unit II Process of research Methodology
- Unit III Literature study

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 Unit IV – Methods of research in architecture. Use of surveys, observations, experiments, secondary sources.

#### SESSIONAL WORK:

- Tutorial based on all of the above units
- Literature Review of at least 5 papers related to the topic of their choice.
- Research proposal giving details of aims, objectives, scope, limitations, methods, samples selected on the topic approved by the head of the institution.

#### NOTE:

- The guide must have minimum 5 years of teaching experience. Preferably a guide should not guide more than 8 students.
- It is desirable that the research seminar is presented in front of experts.
- It is beneficial to the students if the topic is related to the architectural design project of semester X.

#### REFERENCE BOOKS

- Babbie, E. The Practice of Social Research. third edition. Belmont: Wadsworth Publishing Co., 1983. book.
- Cresswell, J.W. Research Design: Qualitative and Quantitative Approaches. Thousand Oaks: Sage, 1994. Book.
- 3. De Vaus, D.A. Surveys in Social Research. Jaipur: Rawat Publications, 2003. Book.
- Pey, T. Qualitative Data Analysis: A User Friendly Guide for Social Scientists. London: TV Routledge, 1993. Book

  5. Groat, L. & Wang, D. Architectural Research Methods. New York: John Wiley and Sons Inc., 2002. Book.
  - 6. Kothari, C.R. Research Methodology: Methods and Techniques. New Delhi: Wishwa Prakashan, 2005. Book.
  - 7. Michelson, William. *Behavioural Methods in Environmental Design*. Stroudsberg, Pennsylvania: Dowden, Hutchinson and Ross, Inc., 1982.
  - 8. Nachmias, C.F. & Nachmias, D. Research Methods in Social Sciences. Great Britain: St. Martin's Press Inc., 1996. Book.
  - 9. Patton, M.Q. Qualitative Evaluation Methods. Newbury Park: Sage Publications, 1980. Book.
  - 10. Sanoff, H. *Methods of Architectural Programming*. Vol. 29. Dowden Huthinson and Ross, Inc., 1977. document.
  - 11. —. Visual Research Methods in Design. USA: Van Nostrand Reinhold, 1991.

Subject Code		4201559 (PP)		
Teaching Scheme		Examination Scheme		
Total Contact Periods per week (lectures=1, Studio=2)	Sessional (Internal) Sessional (External) Viva (Internal) Viva (External)	Nil Nil Nil Nil		
	In-semester exam	30		
	End Semester exam	70		
	Total Marks	100		
		Total Credits	2	



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Housing and Urbanization: Charles Correa Garden Cities of Tomorrow: Sir Ebenezer Howard Maharashtra Regional and Town Planning Act, 1966 Traffic and Transportation Planning by L.R. kadiali

\*\*\*

Subject Code Teaching Scheme		4201566 (SS) Examination Scheme	
	In-semester exam  End Semester exam	nil nil	
	Total Marks	50	
		Total Credits	2

#### **COURSE OBJECTIVES:**

- To enable students to undertake research focussed on an issue related to the built environment.
- To report research in a technical manner.

#### COURSE OUTLINE:

DRAITT SY Data-collection and Analysis-propagation to the propagation of data and analysis propagat

Ullit II Flest

Presentation of data using various techniques (verbal, visual, graphical,

numerical)

Unit III

Technical writing

Unit IV

Presentation of a research paper in form of a seminar

#### **SESSIONAL WORK:**

- Tutorial based on units I to III.
- To undertake original research work on the research proposal prepared in Semester VII and report the research in form of a technical paper of 4000 words minimum.

#### NOTE:

- The guide must have minimum 5 years of teaching experience. Preferably a guide should not guide more than 8 students.
- It is desirable that the research seminar is presented in front of experts.
- It is beneficial to the students if the topic of research is related to the architectural design project of semester X.

#### REFERENCE BOOKS

Babbie, E. The Practice of Social Research. third edition. Belmont: Wadsworth Publishing Co., 1983. book.

Cresswell, J.W. Research Design: Qualitative and Quantitative Approaches. Thousand Oaks: Sage, 1994. Book.

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ecture

De Vaus, D.A. Surveys in Social Research. Jaipur: Rawat Publications, 2003. Book.

Dey, I. Qualitative Data Analysis: A User Friendly Guide for Social Scientists. London: Routledge, 1993. Book.

Groat, L. & Wang, D. Architectural Research Methods. New York: John Wiley and Sons Inc., 2002. Book.

Kothari, C.R. Research Methodology: Methods and Techniques. New Delhi: Wishwa Prakashan, 2005. Book.

Michelson, William. *Behavioural Methods in Environmental Design*. Stroudsberg, Pennsylvania: Dowden, Hutchinson and Ross, Inc., 1982.

Nachmias, C.F. & Nachmias, D. Research Methods in Social Sciences. Great Britain: St. Martin's Press Inc., 1996. Book.

Patton, M.Q. Qualitative Evaluation Methods. Newbury Park: Sage Publications, 1980. Book.

Sanoff, H. Methods of Architectural Programming. Vol. 29. Dowden Huthinson and Ross, Inc., 1977. document.

-. Visual Research Methods in Design. USA: Van Nostrand Reinhold, 1991.

Quantity Surveying And Estim	ation - I			
Subject Code Teaching Scheme		4201567 (PP) Examination Scheme		
ORAFT SYLLABUS	FOF	In-semester exam  Erd Semester exam  Total Marks	30 70 ACULTY 100 ACULTY	
		Total Credits	2	

#### COURSE OBJECTIVES:

- To enable students in working out quantities for items of plumbing and sanitation work in a structure.
- To enable students in working out quantities of various items of work for an Industrial structure and acquaint them for preparing rate analysis and indent of material.

#### COURSE OUTLINE:

Unit I. Introduction to Analysis of Rate, Factors affecting Rate of any Item of work, Importance of Rate Analysis, Essentials of Rate Analysis.

Unit II. Unit Rate, Direct Cost, Indirect Cost, Overhead Charges, Day Work, Task Work, Piece work, Indent of Material,

Unit III. Studying and Working out rate Analysis of minimum 20 numbers of standard items of work based on prevailing market rates.

Unit IV Studying and preparing Indent of Material of minimum 20 numbers of standard items of work.

Unit V Working out quantities for plumbing and sanitation items of work and preparing measurement sheet and abstract for all items of work.

Page **41** of **50** 



#### RECOMMENDED READING

- NBC 2016 Vol 2, Part 9, Sections (1, 2, 3)
- Handbook on Water supply and Drainage BIS SP 35 1987
- Building Services Handbook Fred Hall & Roger Greeno
- Sanitation, Drainage and Water Supply Mitchell.
- IPC 2018 (International Plumbing Code)
- Plumbing Design &Practise S G Deolalikar
- Environment and Services Peter Burberry.

Climatology			
Course Code	2201925 [SS]		
TeachingScheme	ExaminationScheme		
TotalContact Hoursperweek	Sessional [CIA 25 + EA 25]	50	
(lectures=1 Studio=2, Total = 3)	In semester exam		
	End Semester exam	400	
	TotalMarks	50	
	Total Credits	02	

#### COURSE OBJECTIVES:

To understand climate as a determinant of architectural design and to enable the students to evolve climate responsive design.

#### COURSE OUTLINE

#### Unit I:

- 1. Understanding the Earth-Sun relation and context of what shapes climate.
- 2. Elements of climate and understanding climate at different scales ie, global, regional, macro and micro.

#### Unit II:

- 1. Global Climate classification
- 2. Climatic zones of India and its classifications

#### Unit III:

1. Introduction to passive design strategies at various scales ie urban, building and building component scale.

#### Unit IV:

1. Introduction to concept of Thermal Comfort in buildings.

#### Unit V:

1. Introduction to various tools like sun path, bioclimatic chart site analysis matrix etc that are used to study sun movement, wind and comfort in buildings.



- Individual Assignment to apply the various tools like sun path and bioclimatic chart in building element design etc.
- Group work to study contemporary and vernacular architectural case studies in India with climate responsive architecture and passive design strategies.
- Minimum two tutorials on all the units.



Course Code	2201930 [SS]	
TeachingScheme	ExaminationScheme	
TotalContact Hoursperweek (lectures=1 Studio=2, Total = 3)	Sessional [CIA 25 + EA 25]  In semester exam	50
	End Semester exam TotalMarks	- 50
	Total Credits	02

# COURSE OBJECTIVES:

Basic introduction to Multidisciplinary nature of environmental studies with focus on

- Natural Resources
- Eco Systems
- Biodiversity and its conservation
- Environmental Pollution
- Environment Legislation and Social aspects of environment
- Environment friendly buildings

# COURSE CONTENT:

Unit I -Natural Resources-Land, water, forest, energy and food

# Unit II -Concept of Eco Systems with structure and functions

- Biochemical cycles
- Different ecosystems such as forest ecosystem, grassland ecosystem, desert ecosystem, aquatic ecosystems (ponds, lakes, streams, rivers, estuaries, oceans)

# Unit III -Biodiversity

- Value of biodiversity: consumptive, productive use, social, ethical and aesthetic
- Treats to biodiversity and conservation of biodiversity(in-situ and ex-situ)

# Unit IV - Environmental Pollution

• Causes, effects and control measures of air pollution, water pollution, soil pollution, marine pollution noise pollution, thermal pollution and nuclear hazards

Unit IV -Environment Legislation and Social aspects of environment

- Basic Introduction to Environment Protection Act, Air (Prevention and Control of Pollution)
   Act, Water (Prevention and Control of Pollution) Act, Wildlife Protection Act and Forest
   Conservation Act
- Environment and human health, human rights and value education for environmental awareness
- Basic introduction to Environment clearance for construction projects
- Brief introduction to the concept of "green buildings" and green building rating systems.

#### SUBMISSION REQUIREMENT FOR SESSIONAL WORK:

- Journal on each unit with basic concept, definitions and case studies
- Seminar/essay on any one current environmental issue and its interconnectedness with architecture/development

#### OUTCOME:

Students should be able to grasp the interdisciplinary nature of environment science and its interdependence on development and society. They should be able to think holistically about environment when taking architectural design decisions

#### RECOMMENDED READINGS:

- 1. Textbook for Environmental Studies for undergraduate courses of all branches of higher education, ErachBharucha for University Grants Commission
- 2. Objective Environmental Science, B.B.Singh
- 3. Fundamentals of Environmental Studies , MahuaBasu and S. Xavier
- 4. Environment and Development,1st Edition, Basic Principles, Human Activities, and Environmental Implications, Editors: Stavros PoulopoulosVassilisInglezakis

HISTORY OF ARCHITECTURE AND	CULTURE IV	
Course Code	2201931 [SS]	
TeachingScheme	ExaminationScheme	
TotalContact	Sessional [CIA 25+EA 25] Viva	50NIL
Hours per week= (lectures=1, Studio=2, Total=3)	In-semester exam	NIL
	End Semester exam	NIL
	TotalMarks	50
	Total Credits	02

#### Course Objectives:

 To introduce students to the developments in architecture of the post-medieve Western World as a result of the cultural, political, and economic contexts.

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PAWAF

 It is beneficial to the students if the topic is related to their architectural design project.

# **RECOMMENDED READINGS:**

- 1. Babbie, E. 1983. *The Practice of Social Research*. Third edition. Belmont: Wadsworth Publishing Co.
- 2. Creswell, J.W. 1994. Research Design: Qualitative and Quantitative Approaches. Thousand Oaks: Sage.
- 3. De Vaus, D.A. 2003. Surveys in Social Research. Jaipur: Rawat Publications.
- 4. Dey, I. 1993. Qualitative Data Analysis: A User Friendly Guide for Social Scientists. London: Routledge.
- 5. Groat, L. & Wang, D. 2002. Architectural Research Methods. New York: John Wiley and Sons Inc.
- 6. Kothari, C.R. 2005. Research Methodology: Methods and Techniques. New Delhi: Wishwa Prakashan.
- 7. Michelson, William. 1982. Behavioural Methods in Environmental Design. Stroudsburg, Pennsylvania: Dowden, Hutchinson and Ross, Inc.
- 8. Nachmias, C.F. & Nachmias, D. 1996. Research Methods in Social Sciences. Great Britain: St. Martin's Press Inc.
- 9. Patton, M.Q. 1980. Qualitative Evaluation Methods. Newbury Park: Sage Publications.
- 10. Sanoff, H. 1977. *Methods of Architectural Programming*. Vol. 29. Dowden Huthinson and Ross, Inc.
- 11. Sanoff, H. 1991. Visual Research Methods in Design. USA: Routledge Revivals.
- 12. \*\* Research papers published in journals from UGC-CARE list may be referred for understanding the overall structure and style of technical writing.

Course Code	5201970 [SS]	
Teaching Scheme	Examination Scheme	
	Sessional (internal)	50
	Sessional (external)	50
Total Contact	Viva (internal)	NIL
Hours per week: 4	Viva (external)	NIL
(Lecture: 1, Studio:3)	In-semester exam	NIL
	End Semester exam	ME
	Total Marks	100 2 3
	Total Credits	08

**COURSE OBJECTIVES** 

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To allow the students to study a subject of their interest and develop theoretical as well as practical understanding of the same

As mentioned in the course structure of 2019 pattern syllabus [Appendix B] a student may adhere to a particular stream of elective of his/her choice and nurture his/her area of interest and develop his/her expertise.

However, colleges have to ensure that the student does not repeat a particular elective.

#### COURSE OUTLINE:

Colleges have to develop course outline for the elective they wish to offer such that theoretical as well as practical aspects are covered linking them to the field of architecture.

Apart from lectures delivered by the subject resource persons, self-study in form of hands-on workshop / field work/ review of literature / seminar or any suitable format of learning may be adopted.

#### SESSIONAL WORK:

The submission to be devised by the colleges in form suitable to the elective offered. The format could be [but not limited to] as following.

- Field study reports
- Mapping / documentation / photographic / video graphic documentation
- Measured drawings
- Computer based assignments
- Tutorials

QUANTITY SURVEYING & SPECIF Course Code	4201958 [THEORY]	
Teaching Scheme	Examination Scheme	
Total Contact	Sessional Viva	NIL
	In-semester exam	30
Hours per week: 4 (Lectures: 2, Studio :2)	End Semester exam	70
(Lectures, 2, Studio .2)	Total Marks	100
	Total Credits	03

#### COURSE OBJECTIVES:

To Introduce Estimation as an important Subject for Architecture.

 To Understand Different methods of Computing Quantities for items of work in a structure.

 To acquaint students with methodology of writing specifications with reference to building trades, materials, workmanship & performance of different items of work.

Course Code	4201963 [SS]	
Teaching Scheme	Examination Scheme	
	Sessional (internal)	25
	Sessional (external)	25
Total Contact	Viva (internal)	NIL
Hours per week: 3	Viva (external)	NIL
(Lecture: 1, Studio :2)	In-semester exam	NIL
	End Semester exam	NIL
	Total Marks	50
	Total Credits	02

#### **COURSE OBJECTIVES**

To allow the students to study a subject of their interest and develop theoretical as well as practical understanding of the same

As mentioned in the course structure of 2019 pattern syllabus [Appendix B] a student may adhere to a particular stream of elective of his/her choice and nurture his/her area of interest and develop his/her expertise.

However, colleges have to ensure that the student does not repeat a particular elective.

## COURSE OUTLINE:

Colleges have to develop course outline for the elective they wish to offer such that theoretical as well as practical aspects are covered linking them to the field of architecture.

Apart from lectures delivered by the subject resource persons, self-study in form of hands-on workshop / field work/ review of literature / seminar or any suitable format of learning may be adopted.

# SESSIONAL WORK:

The submission to be devised by the colleges in form suitable to the elective offered. The format could be [but not limited to] as following.

- Field study reports
- Mapping / documentation / photographic / video graphic documentation
- Measured drawings
- Computer based assignments
- Tutorials

ELECTIVE V		
Course Code	4201964 [SS]	
Teaching Scheme	Examination Scheme	
	Sessional (internal)	25
	Sessional (external)	25
Total Contact	Viva (internal)	NIL
Hours per week: 3	Viva (external)	NIL
(Lecture: 1, Studio:2)	In-semester exam	NIL
	End Semester exam	NIL
	Total Marks	50
	Total Credits	02

#### **COURSE OBJECTIVES**

To allow the students to study a subject of their interest and develop theoretical as well as practical understanding of the same

As mentioned in the course structure of 2019 pattern syllabus [Appendix B] a student may adhere to a particular stream of elective of his/her choice and nurture his/her area of interest and develop his/her expertise.

However, colleges have to ensure that the student does not repeat a particular elective.

## COURSE OUTLINE:

Colleges have to develop course outline for the elective they wish to offer such that theoretical as well as practical aspects are covered linking them to the field of architecture.

Apart from lectures delivered by the subject resource persons, self-study in form of hands-on workshop / field work/ review of literature / seminar or any suitable format of learning may be adopted.

# **SESSIONAL WORK:**

The submission to be devised by the colleges in form suitable to the elective offered. The format could be [but not limited to] as following.

- Field study reports
- Mapping / documentation / photographic / video graphic documentation
- Measured drawings
- Computer based assignments
- Tutorials

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- 8. Specification Writing for Architects & Engineers, By Donald A. Watson
- 9. Specification Writing for Architects & Surveyors, By Arthur J. Wills
- 10. Estimating, Costing, Specification & Valuation, By M. Chakraborty
- 11. Reference drawings from offices of MEP consultants

PROFESSIONAL PRACTICE		
Course Code	4201959 [THEORY]	
Teaching Scheme	Examination Scheme	
Total Contact	Sessional Viva	NIL
	In-semester exam	30
Hours per week: 3 (Lectures: 2, Studio :1)	End Semester exam	70
(Lectures. 2, Studio .1)	Total Marks	100
	Total Credits	03

## COURSE OBJECTIVE:

- To acquaint the student with the role & stature of the Architect in the society and understand duties, liabilities, responsibilities & ethics as a professional.
- To acquaint the student with the scope & avenues of Professional Architectural services and the demands & mode of Professional Practice field.
- To familiarize & prepare the student with the adequate knowledge of an Architect's office administration, documentation, banking, taxation & other procedures of office along with the Laws applicable to Architects.
- To familiarize the student with the Council of Architecture, Architect's Act, Architectural competitions & other allied professional organizations.

#### COURSE CONTENT:

Unit 1

Introduction to the nature, scope and avenues of service and professional practice as an Architect, Role of an Architect as a technical professional. Illustrate the changing nature of the Architects.

Unit 2:

The Architects Act 1972, The Council of Architecture, its composition, legal status, and mandate for to Registration of Architects and for monitoring the Academics and Profession of Architecture, Rules and Regulations of the Council regarding Professional Liabilities & Code of Conduct. Introduction to Architectural Competitions, its Pros and Cons, Rules and Regulations as per Council of Architecture

• Unit 3

Avenues of professional service and mode & nature of professional practice-Types of Organizations, Scope of comprehensive Services, Scale of Fees, and Site supervision, Documentation, Introduction to Office Management, & International practice.

· Unit 4

Taxation (Income tax, Goods & Service Tax and Professional tax), Banking, Insurance, and laws applicable to architects.

#### Unit 5

Introduction to the Role and Legal duties of Architects in Arbitration and Valuation.

#### Unit 6

Introduction to IIA, IIID, IUDI, ITPI, ISOLA and such professional organizations. Understanding the need for Architects to be aware, sensitive and active in Social and Civic issues in Urban context.

#### **RECOMMENDED READINGS:**

- Latest published Handbook of Professional Document: Council of Architecture Publication
- 2. The Architect's Act, 1972: Govt. of India Publication
- 3. Professional Practice by Roshan H. Namawati
- 4. Professional Practice in India by Madhav G. Deobhakta
- 5. Architectural Practice & Procedure by Vasant S. Apte

# APPENDIX C : AUDIT COURSES

The student can opt for one audit course in a semester during first to eighth semester. A student can opt for a particular course from the list below only once and cannot repeat the same course. The courses may be offered based upon the availability of resources in a college. The method of conduct of course could be based on lectures, site visits, small projects, online sources etc. and can be devised by individual colleges. The course outline given is only suggestive and colleges can expand or modify it for enrichment of the course. Advanced courses are offered in case of Performing Arts, Foreign Language and Yoga for students to continue learning these and enhance these skills.

Sr. No.	Code	Title	Brief Course Outline
1	A	Crafts	Introduction to crafts across the world through history. Types of Indian crafts Study of any one craft of India.
2	В	Creative Writing	Writing as an art. Fictional and non fictional writing. Poetry, short stories playwriting. Famous Indian writers, poets and play wrights and their works.
3	С	Performing Arts	Introduction to performing arts across the world through history. Types of Indian performing arts. Introduction to Natya-Shastra. Classical, folk, traditional performing arts. Dance, Music, Drama, Cinema. A student can take up any one art form for learning.
4	D	Foreign Language	Basic introduction to German or Japanese language or a language which a college may choose to offer – syllables, pronunciations, words, simple sentences, grammar.
5	E	Cyber security	Introduction to cyber crime. Types of cyber crimes. Do and don'ts while using computers, smart phones, internet. Security measures to protect from crime. Crime detection mechanism and legislation.
6	F	Yoga	Introduction to Yoga. Benefits of Yoga. Types of yogasanas.
7	G	Basics of Accounting and Book keeping	Introduction to accounting and various terminologies. Maintaining books of account. Debit and credit.
8	Н	Electrical Maintenance	Basic electrical gadgets in home and offices. Introduction to problems related to electricity supply in home environments. Precautions while handling electrical gadgets and wiring. Mechanism of protection from electrical hazards.
9	1	Culinary Art and Practices	Introduction to the basic need of food. Geographical and cultural factors affecting food. Various cuisines and culinary arts across the world. Social, health, dietary, aspects of cuisines. Food cultures in modern times. Places of food.
10	J	Civics	Constitution of India. Indian democracy. Citizenship and Rights and responsibilities of citizens. Legislative framework.
11	К	Right to Information	Right to Information Act in India. Its need, scope and significance. Use of right to information. Responsibilities of using RTI. Limitations of using RTI. Case studies and legal precedents of using RTI.
12	L	Sign Language	Introduction to need and significance of inclusive social environment.  Communication with the persons who have hearing and speech disabilities.  Learning sign language.
13	M .	Advanced course in Performing Arts	A student who has completed the audit course in Performing Arts [C] can opt for this course. He/she can extend the learning of the art chosen by the student.
14	N	Advanced Course in Foreign Language	A student who has completed the audit course in Foreign Language [D] can opt for this course. He/she can extend the learning of the language chosen for study.
15	0	Advanced course in Yoga	A student who has completed the audit course in Yoga [F] can opt for this course. He/she can extend the learning of yoga.

# सावित्रीबाई फुले पुणे विद्यापीठ

(पूर्वीचे पुणे विद्यापीठ)

दूरध्वनी कमांक :

०२०-२५६२११५६ २५६०११५७ २५६०११६०



शैक्षणिक विभाग

गणेशखिंड, पुणे—४११ ००७

वेबसाइट : www.unipune.ac.in

ई—मेल : boards@pun.unipune.ac.in

दिनांक : 90/92/2020

संदर्भ क. : सीबीएच/ 693

परिपत्रक क्र. ३४४/२०२०

विषय:— Democracy, Election and Governance (2 Credits) U.G. Syllabus and Introduction to Constitution (2 Credits) P.G. Syllabus (Compulsory Add-on Audit Course for All Faculty) या कोर्सच्या मार्गदर्शक तत्वांना मान्यता देणेबाबत.

विद्यापीठ अधिकार मंडळाने घेतलेल्या निर्णयानुसार कळविण्यात येते की, Democracy, Election and Governance (2 Credits) U.G. Syllabus and Introduction to Constitution (2 Credits) P.G. Syllabus (Compulsory Add-on Audit Course for All Faculty) या कोर्सच्या मार्गदर्शक तत्वांना मान्यता देण्यात येत आहे.

- १. Introduction to Constitution हा दोन क्रेडिटचा कोर्स सर्व विद्याशाखेंच्या Post कोर्सला शैक्षणिक वर्ष २०२०—२०२१ पासून तिसऱ्या सत्रात सुरू Graduate करण्यात यावा
- २. या कोर्ससाठीचे नियमन विद्यापीठातील विधी विभागाद्वारे करण्यात यावे.
- ३. सदरील कोर्सचे ऑनलाईन आशय तयार करण्याची जबाबदारी विधी विभागाने घेवून Online/Offline आशय वर विकसित करण्यात यावा.
- ४. सदरील कोर्स हा २ क्रेडिटचा असून २५ मार्कस Internal व २५ मार्कस External साठी असतील व त्याचे रूपांतर मार्कस् नुसार ग्रेड मध्ये करण्यात यावे.
- ५. Democracy, Election & Governance हा दोन क्रेडिटचा कोर्स सर्व विद्याशाखिन्सा पदवी परीक्षेस प्रथम वर्षाच्या दुसऱ्या सत्रात शैक्षणिक वर्ष २०२०-२१ करण्यात यावा.

- ६. या कोर्ससाठीचे नियमन प्रत्येक महाविद्यालयातील समाजशास्त्र किंवा राज्यशास्त्र विषयाचे प्राध्यापक यांच्या अध्यक्षतेखाली सदरील कोर्सचे नियमन करण्यात यावे.
- ७. सदरील कोर्समध्ये वेळोवेळी बदल Online/Offline आशय विकसित करणे याची अञ्चाबदारी समाजशास्त्र अञ्यासमंडळाचे प्रमुख डॉ. श्रुती तांबे व राज्यशास्त्र ा अञ्चलका अञ्चलकार अभ्यासमंडळाचे प्रमुख डॉ. बाळ कांबळे यांनी पहावे.
- ८. Democracy Election & Governance हा दोन क्रेडिटचा कोर्स असून २५ मार्कस् हे Internal Assessment व २५ मार्कस् External Assessment साठी असतील व त्याचे रूपांतर मार्कस् नुसार ग्रेड मध्ये करण्यात यावे.
  - ९. Democracy Election & Governance हा कोर्स सुरू करताना ज्या महाविद्यालयात समाजशास्त्र व राज्यशास्त्र विषय नाहीत, त्या महाविद्यालयात इतर विषयाच्या प्राध्यापकांना प्रशिक्षण देवून त्यांना जबाबदारी देण्यात यावी.

मा. प्राचार्य, सर्व संलग्न महाविद्यालये यांना विनंती की, सदर परि्पत्रकाचा आशय सर्व संबंधितांच्या निदर्शनास आणून दयावा. MARY AMERICAN AND A SECRETARIAN SECRETARIA

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उपकुलसचिव (शैक्षणिक विभाग)

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# प्रत माहितीसाठी व पुढील योग्य त्या कार्यवाहीसाठी:-

- १. मा. अधिष्ठाता, मानवविज्ञान विद्याशाखा
- २.मा. प्राचार्य, सर्व संलग्न कला महाविद्यालये
- ३.मा. संचालक, परीक्षा व मूल्यमापन मंडळ, सावित्रीबाई फुले पुणे विद्यापीठ
- ४.मा. संचालक, स्पर्धा परीक्षा केंद्र
- ५.मा. संचालक, (आंतरराष्ट्रीय केंद्र)
- ६. मा. प्रमुख, विद्यापीठ उपकेंद्र :अहमदनगर, नाशिक.
- ७. मा. उपकुलसचिव, परीक्षा (१,२)
- ८. सिस्टीम ॲनालिस्ट डेटा प्रोग्रेसिंग युनिट
- ९. मा. उपकुलसचिव, शैक्षणिक प्रवेश विभाग
- १०.मा. उपकुलसचिव, नियोजन व विकास विभाग
- ११. मा. उपकुलसचिव, शैक्षणिक पात्रता विभाग
- १२. मा. उपकुलसचिव (सभा व दप्तर विभाग)
- १३. मा. उपकुलसचिव (परीक्षा—एस.ॲण्ड टी.विभाग)
- १४. मा. उपकुलसचिव, (कायदा व तकार निवारण विभाग)
- १५. मा. उपकुलसचिव, जनसंपर्क अधिकारी
- १६.मा. सहायक कुलसचिव (परीक्षा समन्वय विभाग)
- १७. मा. सहायक कुलसचिव (गोपनीय कक्ष)
- १८. मा. सहायक कुलसचिव (संलग्नता कक्ष)
- १९. मा. सहायक कुलसचिव (मा. प्र—कुलगुरू कार्यालय)
- २०. मा. कक्षाधिकारी (बहि:स्थ विभाग)

विद्यापरिषद ठराव कृ. — ब ५१ पीए/५१/२०२० दि. ०३.११.२०२०

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# Savitribai Phule Pune University, Pune For All faculties

# 2 credit Compulsory course for all the First Year students in All Faculties

# **Democracy, Election and Governance**

# **Objectives:**

- 1. To introduce the students meaning of democracy and the role of the governance
- 2. To help them understand the various approaches to the study of democracy and governance

# Module 1 Democracy- Foundation and Dimensions

- a. Constitution of India
- b. Evolution of Democracy- Different Models
- c. Dimensions of Democracy-Social, Economic, and Political

# Module 2 Decentralization

- a. Indian tradition of decentralization
- b. History of panchayat Raj institution in the lost independence period
- c. 73<sup>rd</sup> and 74<sup>th</sup> amendments
- d. Challenges of caste, gender, class, democracy and ethnicity

# Module 3 Governance

- a. Meaning and concepts
- b. Government and governance
- c. Inclusion and exclusion

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1.3.1

S. No 2 Research Topic List 2018 - 2022



		וובסבמו רוו ו חלוור		
Sr.No	Name of Student	Project Name   γε	Year	Internal Guide
	Dumbre Chaitanya	Spaces and psychology in Pediatric center.		2018 Prof.Shilpa Ingwale
. 1	2 Gaikwad Ruchira	Barrier free design in public spaces.	201	2018 Prof.Almas Mirshikari
,	3 Gujar Atul	Sustainability aspect: Built and un built areas.	201	2018 Prof.Vaishali. Dandekar
7	4 Gurav Vishal Bharat	Rural sustainability.	201	2018 Prof.Almas Mirshikari
-,	5 Tambe Vijaya	Shading Devices	201	2018 Prof.Vaishali. Dandekar
	6 Yashad Rekhi	Universal Design for Architectural Spaces and structures	201	2018 Prof.Shilpa Ingwale
	7 Tambe Vijaya	To study and analyze the solar system and implementation	201	2018 Prof. Deepali Randhe Prof.Vaishali Dandekar
~	8 Archana Khamtmode	Effect of climatic parameters on classroom design	201	2018 Prof.Shailja Bhagwat
3,	9 Tanmay Jagtap	Role of Material in enhancing sustainable development	201	2018 Prof.Sharayu Magdum
1(	10 Nisha Paryani	Healing Architecture	201	2018 Prof.Almas Mirshikari
1.	11 Shefali Chavan	Perception of housing environment in mid-rise dwellers.	201	2019 Prof.Shailja Bhagwat
1.	12 Rahul Patil	Water bodies around heritage precincts, Saras Baug, Pune	201	2019 Prof. Almas Mirshikari
1	13 SAGAR.A	REHABILITATION UNIT FOR FLOOD AFFECTED PEOPLE	202	2020 Prof. Vaibhav Ghodke
1,	14 NIKHIL.B	FLOOD DISASTER IN URBAN AREAS	202	2020 Dr.Rajendra Koli
1,	15 TEJAL.K	WWR & DAYLIGHT IN ARCHITECTURAL STUDIO	202	2020 Prof.Shailja Bhagwat
1(	16 BHUSHAN.K	REHABILITATION UNIT FOR CYCLONE AREA	202	2020 Prof.Almas Mirshikari
		SPATIAL PREFERENCE OF SENIOR CITIZENS IN RESIDENTIAL		
1.	17 MUDITA.P	OUTDOOR SPACES	202	2020 Prof.Shailja Bhagwat
		STUDY OF EXISTING OUTDOOR SPACE OF INSTITUTIONAL		
15	18 POOJA.T	CAMPUS W.R.T. BARRIER FREE ENVIRONMENT	202	2020 Prof.Vaishali. Dandekar
15	19 KOMAL.S	CIRCULATION OF DISABLED PEOPLES	202	2020 Prof.Vaishali. Dandekar
2(	20 ANKITA.J	DESIGN GUIDELINES FOR TOILET DESIGN FOR ELDERLY PEOPLE	202	2020 Prof.Sunilkumar Bhosale
21	1			
2.	22 Vedika Thorat	Green facades in high rise residential	202	2022 Prof.Vaishali. D
		Architectural design strategies for infection prevention and		
2	23 Gaurav Sawale	control (IPC) in OPD of health-care facilities duo to covid 19	202	2022 Prof. Anupama Sonpitale
2,	24 Amruta Mane	Roof top solar pannels and energy conservation	202	2022 Prof. Vaibhav Ghodke
		Weather conditions in residential buildings(hot and humid		
2	25 Yash Dalvi	climate)	202	2022 Prof.Shailja Bhagwat
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27 Ashiya Mapare	Effects of Green Space in Residential Designs.	2022 Prof.Vishakha Paygude
	Kinetic Architecture on sustainable means - Facade design	
28 Prachi Mahajan		2022 Prof.Vaishali. Dandekar
29 Shivani Nanaware	Evaluation of daylight in office building (IT office)	2022 Prof.Sunilkumar Bhosale
30 Swapnali Pawar	Net zero energy in residential building	2022 Prof.Sunilkumar Bhosale
	Universal accessibility in residential	
31 Siddarth K	buildings	2022 Prof. Vaibhav Ghodke

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1.3.1

S. No 3 **Architectural Design Project List** 2019-2022



		Architectural Design Project Topic			
Sr No	Name of Student	Project Name	Year	Internal Guide	
2	1 Wileya Thambe	SOS Children Village		2018 Prof.Almas Mirshikari	hikari
	2 Buchira Gaikwad	Avurveda Wellness Centre		2019 Dr.Rajendra Koli	
	3 Siddhesh Pissav	Open centre for vocational training		2019 Prof.Shilpa Ingwale	ale
	4 Dewang Dwivedi	Slum Rehabilitation in Context of Urban Sustainability		2019 Prof.Shilpa Ingwale	ale
	5 Shivam Nalawade	Drug De-addiction and rehabilitation centre		2019 Prof.Almas Mirshikari	hikari
	6 Atul Guiar	Natural aHealing and Tranquilty Centre		2019 Prof. Prashant Patil	atil
	7 Wijendra langid	Institute of Skill Development (Pimpri) Maharashtra		2020 Prof. Sunil Kumar Bhosale	ır Bhosale
	8 Sucheta Bhokare	Old Age Home		2020 Prof.Anupama Sonpitale	onpitale
	9 Vedika Shitre	Residential and Educational Centre for orphans		2020 Prof.Anupama Sonpitale	onpitale
	10 Shofali Chawan	Rehabilitation centre for Survivor's of violence		2021 Prof. Sunil Kumar Bhosale	ar Bhosale
	10 Olleran Chawaii	War Memorial		2021 Dr.Rajendra Koli	
	11 Sreeniani Paul	A discoord Training Control		2022 Prof. Sunil Kumar Bhosale	ar Bhosale
	12 Vishakha Bagarao	Advanced Hauma care centre		incadaint Vaichanni	netpe
	13 Anuja Jagtap	Tribal Art and Craft Centre		2022 Prof. Valsifilavi Jagrap	agrap
	14 Mansi Mundade	SOS Children Village, Baramati		2022 Prof.Anupama Sonpitale	onpitale
	15 Gairi Mundhe	De-addiction and rehabilitation centre at Bhor		2022 Prof.Shilpa Ingwale	/ale
	16 Sidhanth Sakure	Zonal Cultural centre		2022 Prof.vaibhav Ghodke	odke
	17 Archita Khangal	Pilgrimage Centre at Alandi		2022 Prof. Vaibhav Ghodke	hodke
	18 Ranvir Raut	Tribal Development centre at Nagpur		2022 Dr.Rajendra Koli	_
	10 Butuin Kothalikar	Hospice care centre at Khargar Navi Mumbai	2	2022 Prof.Almas Mirshikari	hikari

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Place: Pune

DATE: 12 11 2021

# **CERTIFICATE**

This is to certify that the Thesis titled "REHABILITATION CENTER FOR SURVIVOR'S OF VIOLENCE" by Ms. SHEFALI VINAY CHAVAN submitted to Anantrao Pawar College of Architecture, Pune (Affiliated to Savitribai Phule Pune University) in Partial fulfillment of Degree Course of Bachelor of Architecture is a bonafide work completed under the guidance of (guide name).

AR. SHAILAJA BHAGWAT

Name

Thesis Co-coordinator

AR SUNTL BHOSALE

Name

Internal Guide

Dr. Rajendra Koli
Principal

External Examiner

Sign and Date



Principal
Anantrao Pawar College of Anantrao Pawar Pawari, Pune-9
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Ref.No.- APCOA/OFF/ /2018-2019

DATE:

# CERTIFICATE

This is to certify that the Thesis titled "Slum Rehabilitation in the Context of Urban Sustainaibility" by Mr. Dwivedi Devang Sanjay, submitted to Anantrao Pawar College of Architecture, Pune (Affiliated to Savitribai Phule Pune University) in Partial Fulfillment of Degree Course of Bachelor of Architecture is a bonafide work completed under the guidance of Prof. Prashant Patil.

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Prof. Sharayu Magdum

Thesis Co-coordinator

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Prof. Shilpa Ingawle

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**External Examiner** 

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ABSTRACT: In the last two decades, migration from villages and small towns to metropolitan areas has increased tremendously in India. This leads to the degradation of urban environmental quality and sustainable Development especially in the metropolitan cities. The problems faced by the people living in the urban areas of India have become major concerns for the government over the last two decades. Slums are considered to be the major issue within many urban areas; particularly problems related to transportation, population, health and safety. India is one of the fastest developing countries with many metropolitan cities (e.g. Mumbai, Pune, Bangalore, Hyderabad, Delhi and Chennai). To explore the effect of rehabilitation of slums on urban sustainability, part of Mumbai was selected as a case study. Compared to the other metropolitan cities in India, Mumbai is one of the biggest metropolitan regions and capital of the state of Maharashtra with many slums varying in sizes. In addition, every year millions of rupees are being spent to resettle and rehabilitate slums to make Mumbai sustainable. It is reported that around 6 percent of the total land holds nearly 60 percent of the total Mumbai population (CBC, 2006). From 1980 onwards, the rate of migration and the sprawling nature of slums into the city has become an major issue, although many organisations are working towards development of Mumbai, the conditions are not conducive to achieving urban sustainable environment as most of the organisations are not working on a united front. Also, various researchers have reported that to maintain the pace of sustainable urbanisation, a holistic approach to sustainable development needs to be considered.

Considering today's poor urban environmental quality in Mumbai, there are many projects under Development and execution to improve the poor conditions. Also, the World Bank has funded many Projects with the primary aim of improving the city's land transport, health and education which affect thousands of families. The majority of families affected by urban development projects are Located in slum areas which are under consideration for resettlement and/ or rehabilitation. The aim of this research is to examine slum areas and their effects on sustainable urban development. To accomplish the above aim, a case study based approach, engaging a series of face-to-face interviews, was used. As a part of this research, an urban development project funded by the World Bank to achieve urban sustainability in Mumbai Metropolitan Region (MMR) was explored. Also, several visits to other slums and rehabilitated areas were conducted to identify the quality of life in slums and rehabilitated areas. The data collected during the face-to-face interviews, was used for descriptive analysis considering various aspects (i.e. social, educational) of urban sustainability. Through this research, the reasons for slums and problems related to slums were explored. During the research, it is revealed that some people still think that urbanisation is responsible for Unsustainable development and they are not in favour of resettlement and rehabilitation. This Suggests that to achieve successful urban sustainability, other issues such as employment, education and general awareness are also required along with low-cost mass housing ecture

Key Words: Rehabilitation and resettlement, slums, and sustainable development

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# CERTIFICATE

This is to certify that Mr. Yashad Vijay Rekhi is a bonafied student of this college studying in B.Arch. course during the academic year 2017-2018 Fourth Year second semester.

His Dissertation topic registered for Course is" "UNIVERSAL DESIGN FOR ARCHITECTURAL SPACES AND STRUCTURES". His dissertation and progress are satisfactory and to the best of my knowledge, He is appearing for Fourth year B.Arch. Examination in April 2018.

This college is affiliated to Savitribai Phule Pune University and approved by council of Architecture, New Delhi and all India council of Technical education, New Delhi.

Prof.Shilpa Ingawle

Dissertation Co-ordinator

Prof. Shilpa Ingawle

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#### DATE:

# CERTIFICATE

This is to certify that Ms. Khatmode archana is the bonafied student of this college studying in B.Arch. course during the academic year 2017-2018 Fourth Year second semester.

Her Dissertation topic registered for Corse is" EFFECT OF CLIMATIC PARAMETERS ON CLASSROOM DESIGN ". Her dissertation and progress are satisfactory and to the best of my knowledge, She is appearing for Fourth year B.Arch. examination in April 2018. This college is affiliated to Savitribai Phule Pune University and approved by council of Architecture, New Delhi and all India council of Technical education, New Delhi.

Prof.Shilpa Ingawle

Dissertation Co-ordinator

Prof. Shailaja Bhagwat

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# **ABSTRACT**

The energy conservation through energy efficiency in the building has acquired prime importance all over the world. The four main aspects for energy efficiency in a building include first and foremost the nearly zero energy passive building design before actual construction, secondly the usage of low energy building materials during its construction, thirdly use of energy efficient equipment for low operational energy requirement and lastly integration of renewable energy technologies for various applications. These aspects have been discussed along with their economics and environmental impacts.

The development in solar PV technology is growing very fast in recent years due to technological improvement, cost reductions in materials and government support for renewable energy based electricity production. Photovoltaic is playing an important role to utilize solar energy for electricity production worldwide. At present, the PV market is growing rapidly with worldwide around 23.5 GW in 2010 and also growing at an annual rate of 35–40%, which makes photovoltaic as one of the fastest growing industries. The efficiency of solar cell is one of the important parameter in order to establish this technology in the market. Presently, extensive research work is going for efficiency improvement of solar cells for commercial use. The efficiency of monocrystalline silicon solar cell has showed very good improvement year by year. It starts with only 15% in 1950s and then increase to 17% in 1970s and continuously increase up to 28% nowadays. The growth in solar photovoltaic technologies including worldwide status, materials for solar cells, efficiency, factor affecting the performance of PV module, overview on cost analysis of PV and its environmental impact are reviewed in this paper.

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2 TO STUDY AND ANALYZE THE SOLAR SYSTEM (PHOTOVOLTAIC) AND IMPLEMENTATION.

#### ABSTRACT:

In India, there are changing demographics increasing the population, the disability rate is also counting up to 10% of our total population as per the census conducted in 2011. This in turn significantly impacts the people and their interactions within the built environment. Currently, in our society and surroundings there are many buildings, spaces meeting minimum accessibility standards, though they continuously create poorly designed and inaccessible buildings to all. Thus Barrier Free Design allows for full participation within the society and surroundings preventing discrimination and stigmatization associated with gender, race, religion as well as age and ability.

Thus, the social aim of this study is to integrate disabled people into the society in order for them to take an active part in society and lead a normal life. To be active a disabled person should be able to commute between his home and office and other necessary destinations. The technical aim of the study is to provide a barrier free environment for the independence, convenience and safety of all disabled people.

Owing to the traditional conception of the disabled as a person who has to be dependent, it had not been a common practice in the past for disabled people to be active users of public buildings and spaces. It had been presupposed that people with disabilities had to be taken care of by the family within the confines of the domestic space.

However, as a result of changes in governmental policies to address the need to train persons with disabilities to acquire skills and necessary vocations and professions for active participation in the socio-economic development process, there is an upsurge of the number of disabled persons who are leading active public lives, becoming part of the user-group utilizing public buildings for production, recreation, commerce, transportation, education etc.

# SIGNIFICANCE OF THE TOPIC:

It was always to my admiration that how the physically disabled perceive in the spaces designed for the otherwise privileged people. What would be their emotional state of mind as well as what would be their thoughts when a space or a building they would love to visit without any discomfort is non-accessible, just because of the negligence towards the provisions that would cater the physically handicapped. This curiosity led to a series of researches about these people and the understanding of their potential and courage while seeking new horizons despite all the odds of life.

Thus, the purpose of choosing this topic is twofold; immediate purpose being to understand the space and requirements for the disabled. The larger scope of it is to thereby look into the relevance of differently abled and how architectural features can change their scope and perceptions in their minds regarding lack of adequate considerations for them.

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DATE: 2/4/18

# CERTIFICATE

This is to certify that Miss. Tambe Vijaya Rajendra is the bonafied student of this college studying in B.Arch. course during the academic year 2017-2018 Fourth Year second semester.

Her Dissertation topic registered for Corse is TO STUDY AND ANALYZE THE SOLAR YSTEM (PHOTOVOLTAIC) AND IMPLEMENTATION. Her dissertation and progress are satisfactory and to the best of my knowledge, she is appearing for Fourth year B.Arch. examination in April 2018.

This college is affiliated to Savitribai Phule Pune University and approved by council of Architecture, New Delhi and all India council of Technical education, New Delhi.

Prof.Shilpa Ingawle

Dissertation Co-ordinator

Dr. Rajendra Koli

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Prof. Deepali Randhe

Prof. Vaishali dandekar

Internal Guide

3/4/18

External Examiner

Sign and Date

Title: Effect of Climatic Parameters on Classroom Design for Institutional Building

# ABSTRACT:

The importance of climate on building design requires the necessity of a comprehensive study and research in this field. The fact that educational buildings are places where the majority of us spend most of our formative years, their design plays an important part in improving the education level and well-being of society. A number of changes have been made to the traditional design of these buildings in the last few decades and the old education system, where the teacher solely acts as an informer and the children as receivers, is by and large outdated. Architects have to find creative ways of mixing public and private spaces and variations in between those, without the limitations of the closed, rectangular class room. Classroom environment is very important for students. The designer or architect should design with consideration of climate and have full knowledge of prevailing climatic and weather conditions of the area under design.

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Ref.No-APCOA/OFF/298/2018-2019

DATE: 28/03/19

# CERTIFICATE

This is to certify that the Thesis titled "SOS children's village, vitthalwadi" by Miss. TAMBE VIJAYA RAJENDRA submitted to Anantrao Pawar College of Architecture, Pune (Affiliated to Savitribai Phule Pune University) in Partial Fulfillment of Degree Course of Bachelor of Architecture is a bonafide work completed under the guidance of Prof. Alamas Mirshikari

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Prof. Sharayu Magdum

Thesis Co-coordinator

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# Akhil Bhartiya Maratha Sikshan Parishad's Anantrao Pawar College of Architecture, Pune Savitribai Phule Pune University, India 2017-2018

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# CERTIFICATE

This is to certify that Master. Tanmay S Jagtap is the bonafied student of this college studying in B.Arch, course during the academic year 2017-2018 Fourth Year second semester.

His Dissertation topic registered for Corse is "ROLE OF MATERIAL IN ENHANCING SUSTAINABLE DEVELOPMENT". His dissertation and progress are satisfactory and to the best of my knowledge, He is appearing for Fourth year B.Arch. examination in April 2018.

This college is affiliated to Savitribai Phule Pune University and approved by council of Architecture, New Delhi and all India council of Technical education, New Delhi.

Prof.Shilpa Ingawle

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# Role Of Material In Enhancing Sustainable Development

# Role of Material in Enhancing Sustainable Office building

#### Abstract:

As education and concern pertaining to environmental and sustainability issues like implications of resources destruction, decrease in bio-diversity as well as climate change multiply, so has the need for housing developments that lead to less damaging effects on the environment, whilst enabling living standard to be sustained. Builders, developers and material providers have addressed this demand by creating approaches and technologies that minimize energy, water and main material consumption, decrease greenhouse gas emissions and sustain or enhance surrounding ecological systems and services. Several administration and nongovernmental institutions in addition have aimed to change the sustainability of the building industry by developing green rating systems that can be used to evaluate the environmental performance of new and existing building. This paper discusses material resources criteria and the impact as a sustainable rating tool.

For a variety of reasons, the concrete industry is not sustainable. First, it consumes huge quantities of virgin materials. Second, the principal binder in concrete is Portland cement, the production of which is a major contributor to green-house gas emissions that are implicated in global warming and climate change. Third, many concrete structures suffer from lack of durability which has an adverse effect on the resource productivity of the industry.

This paper discusses the Solution to this environmental problem; the solution to this problem is not to be replacing concrete with other materials but to reduce the environmental impact of cement. A reduction in cement use is desirable in terms of energy and this can be achieved by using other cementations materials or admixtures.

**Ceywords:** Sustainable development; Cement; CO2; Green Concrete; Supplemental cementations materials; By-product; carbon foot print.



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# CERTIFICATE

This is to certify that the Thesis titled "Natural Healing and Tranquility Centre" by Gujar Atul Pandurang submitted to Anantrao Pawar College of Architecture, Pune (Affiliated to Savitribai Phule Pune University) in Partial Fulfillment of Degree Course of Bachelor of Architecture is a bonafide work completed under the guidance of Dr. Rajendra Koli.

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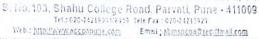
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# CERTIFICATE

This is to certify that the Thesis titled 'ADVANCED TRAUMA CARE CENTRE' by Ms. BAGARAO VISHAKHA SUDHIR submitted to Anantrao Pawar College of Architecture, Pune (Affiliated to Savitribai Phule Pune University) in Partial Fulfilment of the Degree Course of Bachelor of Architecture is a bonafide work completed under the guidance of Prof. Sunil Bhosale.

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# ADVANCED TRAUMA CARE CENTRE

# A] Title: ADVANCED TRAUMA CARE CENTRE - LEVEL 3

# Abstract

"Next to creating life the finest thing man can do is save one'

-Abraham Lincoln

Few events are more distressing than an unexpected loss of life or permanent disability caused by physical violence or accidental injury. Particularly tragic is the injured, potentially salvageable patient who dies needlessly through delay in retrieval, inadequate assessment or ineffective treatment.

Injury is an increasingly significant health problem throughout the world. Every day, many people die from injuries, and for every person who dies, several thousand more are injured, many of them with permanent sequelae. Injury accounts for 16% of the global burden of disease. The burden of death and disability from injury is especially notable in low- and middle-income countries. Road accidents are the most unwanted events to happen, though they happen quite often. The number of fatalities has been steadily increasing with the growth in vehicle population. In India trauma is now the leading killer of young persons in their productive years. The 3<sup>rd</sup> National Health Profile of India 2009 lists injury as the leading cause of death in India.

Advanced trauma care centre is a hospital equipped and staffed to provide care for patients suffering from such Major traumatic injuries. Trauma Centre is not an infrastructure concept but a system concept in which the appropriate infrastructure, equipment & human resources work in tundem to provide the necessary trauma care services to a patient.

Morbidity and mortality following traumatic injuries constitute a substantial global health challenge affecting both the society and the individual.

Keywords: Medical trauma, Traumatic injuries, Accidents, Recovery, Sustainabilityure



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# CERTIFICATE

This is to certify that the Thesis titled 'TRIBAL ART AND CRAFT CENTRE' by MISS. JAGTAP ANUJA JALINDAR submitted to Anantrao Pawar College of Architecture, Pune (Affiliated to Savitribai Phule Pune University) in Partial Fulfilment of the Degree Course of Bachelor of Architecture is a bonafide work completed under the guidance of Prof. Vaishanavi Jagtap.

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Arrantrao Pawar College of Architecture, Parvati, Pune-9

# Title: TRIBAL ART AND CRAFT CENTER AT NAGPUR

# ABSTRACT

A craft is a branch of profession that requires some particular kind of skilled work. In historical sense, particularly as pertinent to the Medieval history and earlier, the term is usually applied towards people occupied in small-scale production of goods. The meaning of craft and its values are ever-changing with development of new techniques and methods, Arts and Crafts institute is a craft destination which offers visitors a unique variety will learn about the Central Region of India crafts through hands-on and interaction short term and long term course and workshops and craft demonstration

A craft is a branch of profession that requires some particular kind of skilled work. In historical sense, particularly as pertinent to the Medieval history and earlier, the term is usually applied towards people occupied in small-scale production of goods. The meaning of craft and its values are ever-changing with development of new techniques and methods.

There are many art and craft promoting agency in Maharashtra. There are private, semi government and government agency with different scopes and scale. But the lack adequate space which truly acknowledges the production, promotion and display of crafts. The project has opted for traditional principles in architecture design character of a traditional settlement.

In Madnya Pradesh works of art and craft include bamboo and cane coverings, carpet weaving, durries, folk paintings, iron crafts, jute works, metal crafts, ornaments, Papier Mache, stone carving, stuffed toys, terracotta, textile weaving, woodcraft, and Zari embroidery. Bamboo work, wood carvings, bell metal handicrafts, tribal jewelry, figures of terracotta, clay pieces, and paintings are some of the specialties from Chhattisgarh.

Keywords- Craft and Art, Medieval history, Central region, Art and eraft institute

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DATE:28/03/2019

### CERTIFICATE

This is to certify that the Thesis titled "Open Center for Vocational Training and Indology At Pune" by Mr. Pissay Siddhesh Vasant submitted to Anantrao Pawar College of Architecture, Pune (Affiliated to Savitribai Phule Pune University) in Partial Fulfillment of Degree Course of Bachelor of Architecture is a bonafide work completed under the guidance of Prof. Shilpa Ingawale.

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# CERTIFICATE

This is to certify that the Thesis titled 'SOS CHILDREN'S VILLAGE, BARAMATI' by Ms. MUNDADE MANSI YOGESH submitted to Anantrao Pawar College of Architecture, Pune (Affiliated to Savitribai Phule Pune University) in partial fulfilment of the degree course of Bachelor of Architecture is a bonafide work completed under the guidance of Prof. Anupama Somipatle.

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# A) Title: SOS CHILDREN'S VILLAGE

#### ABSTRACT

India being the vast country has to compete with its share of social imbalances. Out of varied categories fall the unprivileged, mainly the orphans, destitute. Orphans are the children who lost their family/parents under specific condition. In fact, orphan children are victims of the society, a society that has not only deprived them from having warm family that is their natural right, but also can't accept them and looks them as scoria. Problems of these children is lack of sense of security and meeting their needs, lack of self-confidence and lack of expressing problems with right person and lack of being loved by others are other shortcomings and mental and behavioural problems of these children. According to the current survey, India has 31.8 million orphaned and abandoned children in 2021.

Considering the pandemic situation in the world today, there arises a dire need for children to have safe home and education, an accommodation planned to make a good home like impression. It should give them a feeling of security and harmonious surrounding for development of unhampered creativity, independence and the individual choice. In the SOS Children's Village, the children experience family like environment and a long-term support given to every child under their care. This village is designed for giving family, love, respect and security and the planning and designing of spaces will help the children to live happily and can feel like they are nurture by their family.

SOS Children's Village is a international organisation NGO which helps to need of orphan children. SOS provides about 50,000 such children and 15,000 young adults with a permanent new family, with a '24 hours a day' new SOS mother to provide family-based care. SOS Children's Village main objective is to make children who have lost parental care literate, confident, self-reliant and give them a family; ultimately making them contributing citizen. In the SOS Children's Village, the children experience family like environment and a long-term support given to every child under their care. This village is designed for giving family, love, respect and security and the planning and designing of spaces will help the children to live happily and can feel like they are nurture by their family.

Keywords: Orphaned children, social development, family, and home.



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# CERTIFICATE

This is to certify that the Thesis titled 'DE-ADDICTION AND REHABILITATION CENTRE AT BHOR' by Ms. GAURI KAMALAKANT MUNDHE submitted to Anantrao Pawar College of Architecture, Pune (Affiliated to Savitribai Phule Pune University) in partial fulfilment of the degree course of Bachelor of Architecture is a bonafide work completed under the guidance of Prof. Shilpa Ingawale.

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# A) Title: DE-ADDICTION AND REHABILITATION CENTER AT BHOR

#### Abstract:

Substance and non-substance addiction is a major problem worldwide, including in India, and contributes significantly to morbidity and mortality. The Ministry of Social Justice and Empowerment, Government of India, addresses the prevention and rehabilitation aspect of substance use through the establishment of rehabilitation centres run by nongovernmental organizations. It is a nodal ministry to coordinate and monitor all aspects of substance abuse prevention which include assessment of the extent of the problem, preventive action to counteract substance abuse, dissemination of information, public education and welfare of those in need of care. These centres help individual with the treatment to get out of the addiction problem. Rehabilitation centres are equipped with all the resources that are needed to rebuild the damaged life of an addict. Addiction to any substance affects all areas of the individual's life. It adversely impacts one's health, financial status, career or education and reputation. Moreover, it destroys relationships with family, friends and colleagues. The addict needs to seek help from professionals in a rehabilitation center to restore and rebuild his life in all the areas that are damaged. The individual needs a protective and supportive environment so that they can get out of the trail of addiction and the effects it leaves on body. Integrating the built space and the landscape, makes a very good impact on patients' recovery process. Research from avariety of disciplines shows that a range ofenvironmental characteristics can have powerfulhealing and therapeutic benefits for their users. Those characteristics include naturallight and artificial light, colour, views, art work, aroma, modulation of space and form, arrangement of furniture, manipulation of scale and proportion, sound, textureand materials, movement through space and time, andindoor and outdoor landscapes. Our body is constantly reacting to the spaces in which we inhabit. These spaces can have a direct effect on an individual's physiology and mental comfort. Stress levels and the mood of a patient may have the greatest effect on the healing process. There are many perspectives in the recovery of the patients like physical health as well as the mental health. This project is about how we can relate and practice architecture for the deaddiction centres. The close relationship between the two will help create an environment that is more favourable to recovery.

Keywords: Addiction, De-addiction treatment, Rehabilitation, Environment.





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This is to certify that the Thesis titled 'ZONAL CULTURAL CENTRE' by

Mr. SAKURE SIDHANTH RAJOO submitted to Anantrao Pawar College of Architecture Pune (Affiliated to Savitribai Phule Pane University) in Partial Fulfilment of the Degre Course of Bachelor of Architecture is a bonafide work completed under the guidance of Pro

Vaibhay Ghodha.

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#### ZONAL CULTURE CONTRA

# A) Title: ZONAL CULTURAL CENTRE

#### Abstract:

Indian culture is the heritage of social norms, ethical values, traditional customs, belief systems, political systems, artefacts and technologies that originated in or are associated with the ethno-linguistically diverse Indian subcontinent. The term also applies beyond India to countries and cultures whose histories are strongly connected to India by immigration, colonization, or influence, particularly in South Asia and Southeast Asia. India's languages, religions, dance, music, architecture, food and customs differ from place to place within the country

A cultural center is an organization, building or complex that promotes culture and arts. Culture centers can be neighborhood community art organizations, private facilities, government-sponsored or activist-run.

The world is moving towards global exploration and the world of ideas expanded along with the growing connections brought on by exploration, empire building, and trade. As regions became more connected, ideas and religious beliefs spread more rapidly from place to place. This movement of ideas and religion also helped transform the world. In a way this has helped people grow in variety of aspects.

Cultural centres are necessity to keep general public aware of the latest cultural developments in society, to keep them educated about their cultural history, also help them understand and respect other cultures and traditions. It is also an important hub for promotion of new urban and rural Artists. India has a rich culture and need to encourage and promote our culture and art form through cultural center all over the India.

Keywords - Culture, Heritage, Diverse, Beliefs, Artists.

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DATE: 28/02/19

#### CERTIFICATE

This is to certify that the Thesis titled "Ayurveda Wellness Centre" by Miss. Gaikwad Ruchira Girish submitted to Anantrao Pawar College of Architecture, Pune (Affiliated to Savitribai Phule Pune University) in Partial Fulfillment of Degree Course of Bachelor of Architecture is a bonafide work completed under the guidance of Dr. Rajendra Koli.

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#### 1.Introduction:

#### 1.1.Introduction

This thesis introduces a new perspective on the delivery of healthcare, primarily preventative primary care. The design of this project demonstrates how the design of a healthcare facility can improve the overall wellness of a community. Through an integrated wellness platform facility that promotes social interaction, physical activity, and making healthy lifestyle choices, the wellness of the community will be improved. Figure 0.1 shows a perspective of the natural healing and tranquility centre. Natural Healing: Physical and Spiritual Healing (in a Powerful and Nurturing Setting), examines how healing spaces in a clinical setting can influence the healing process of cancer patients undergoing treatment or who have been affected by the disease; providing a solution to incorporate both natural healing spaces and the necessary technological medical infrastructure. Nature and humans are interconnected with one another and should to be treated in a holistic way. The location for this cancer treatment and rehabilitation center is in Knife River, Minnesota, between Duluth and Two Harbors. The intent of this center is to help patients connect with nature to help aid in the healing processes. Nature has long been thought of as a source that can impact our wellbeing. Exposure to nature can not only make people feel better emotionally, but physically as well. Any environment a person is exposed to has the ability to either increase or decrease stress which in turn can impact our bodies. The things we see, hear, or experience can affect our moods and how certain systems in our bodies are working. Nature can also be soothing to people, we tend to find trees, plants, and water captivating which can distract us from physical discomfort. Architecture that incorporates nature can have an impact on its everyday users. Including such spaces, like healing spaces, in our healthcare system can have an influence on patient outcomes.

# 1.2. Significance of topic:

The Health and Wellness Center is committed to delivering the highest quality of health services which include prevention, promotion, and medical care for all students, faculty, and staff. The confidentiality of patient health is of utmost importance in achieving a level of trust and satisfaction. Incorporated into the philosophy of the Health and Wellness Center is the integration of treating the whole person --- mind, body, and spirit. Every year, approximately fourteen million people are diagnosed with cancer worldwide. Of these fourteen million people, eight million will die of the disease. The United States alone will account for about 1,600,000 of the people who will be diagnosed and about 590,000 of the people who will lose their battle with cancer. Cancer patients often face difficult decisions, undergo intensive treatments, and deal with emotional distress. This thesis will examine how healing spaces in a clinical setting can into the disease; providing a solution to incorporate both natural healing spaces and the necessary technological medical infrastructure.



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This is to certify that the Thesis titled 'PILGRIMAGE CENTRE AT ALANDI' by

Ms. KHANGAL ARCHITA PRAMOD submitted to Anantrao Pawar College of
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81

# Title: PILGRIMAGECENTRE

# A Pilgrimage Centre At Alandi

### (A) ABSTRACT

Pilgrimages are not -mindless movements or migrations either. They are voluntaryand individual, unlike the mindless collective migrations familiar in ancient and medieval times. Each is a personal act, following a personal decision, and resulting in a wide range of significant personal experience. Pilgrimage is thus a journey inquest of some ultimate value or some spiritual experience.

Alandi has a special place in the religious life of Maharashtra, as this is the place where the great Marathi Saint Poet "Sant Dnyaneshwar Maharaj" took 'Sajeevan Samadhi' at the age of twenty two in December 1296 AD after penning the most spirited work of Marathi the 'Dnyaneshwari', which is his Marathi commentary on the Bhagwat Geeta. Dnyaneshwari contains the essence of Vedas, Geeta and his own empirical knowledge.

Popularly known as "Devachi Alandi", Alandi has the samadhi and a temple of the Saint Poet Sant Dnyaneshwar. The temple was built in 1570. The Saint spent most part of his short lifespan in Alandi. He inspired the entire Maharashtra to worship Lord Panduranga. Like Pandharpur, Alandi is also a true a pilgrim center for every Maharashtrian.

Every year during the Hindu month of Kartik, devotees from all over Maharashtra assemble in Alandi to commence a spiritual journey to the Sant Dnyaneshwar's Temple. The walk is covered by people of all ages in colourful and vibrant clothes carrying well-decorated paraphernalia of their saint.

Keywords: Pilgrimage, Alandi, Sant Dnyaneshwar, Palkhi, Spiritual, pilgrims.





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This is to certify that the Thesis titled 'TRIBAL DEVELOPMENT CENTRE AT NAGPYR by MR. RAUT RANVIR NETAJI submitted to Anantrao Pawar College of Architecture, Pune (Affiliated to Savitribai Phule Pune University) in Partial Fulfilment of the Degree Course of Bachelor of Architecture is a Bonafede work completed under the guidance of Dr. RAJENDRA KOLL

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Principal Auantrao Pawar College of External Examiner

# TRIBAL DEVELOPMENT CENTER

# A) Title: TRIBAL DEVELOPMENT CENTRE, NAGPUR (T.D.C)

#### Abstract

"Is it eccentric to live in beautiful scenery in the hills among some of the most charming people in the country, even though they may be ignorant and poor?"- Verrier Elwin, Anthropologist.

Art is, without a doubt, one of the most ancient and treasured elements of human culture. Art and culture are expressions of thoughts - they are the ways to represent the socio behavioural characteristics and knowledge of a particular group or society. Tribes are one such society, which are determined by their art, culture and traditions. Sadly, somewhere in race of urbanisation these groups are losing their existence.

Largely due to trends in popular practice, there seems a strong arge to understand their culture and integrate them with the contemporary without disturbing their cultural identity.

As such, in present-day scenario there is a rising need to sensitize people towards these tribes' aesthetic and cultural norms. Also, it's important to rejuvenate these vulnerable groups socially and economically. This can be done via reviving art and architecture as they showcase a cultural connect with the target users. Hence, the crux of the project here aims at Development of Tribe of Maharashtra, India with a focus on reviving their lost cultural identity.

The idea here is to provide an interactive platform for the visitors and the locals, art lovers and the craftsman, the urban and the rural. The development of Tribe with emphasis on social, economic and cultural growth can catalyse a more effective perception. When successfully so, this can further provide a progressive growth pattern to the whole region.

#### Keywords:

Tribal development centre, tribal culture, tribal habitat and life style, tribal museum, vernacular architecture, etc.

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# AKHIL BHARTIYA MARRTHA SHIKSHAN PARISHAD'S

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Ref.No.- APCOA/OFF/ /2018-2019

DATE:

### CERTIFICATE

This is to certify that the Thesis titled "Slum Rehabilitation in the Context of Urban Sustainaibility" by Mr. Dwivedi Devang Sanjay, submitted to Anantrao Pawar College of Architecture, Pune (Affiliated to Savitribai Phule Pune University) in Partial Fulfillment of Degree Course of Bachelor of Architecture is a bonafide work completed under the guidance of Prof. Prashant Patil.

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**Prof.** Sharayu Magdum Thesis Co-coordinator

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Prof. Shilpa Ingawle Internal Guide Sello Jewed on Man

Dr. Rajendra Koli

Principal

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P. 4. 19

External Examiner

ABSTRACT: In the last two decades, migration from villages and small towns to metropolitan areas has increased tremendously in India. This leads to the degradation of urban environmental quality and sustainable Development especially in the metropolitan cities. The problems faced by the people living in the urban areas of India have become major concerns for the government over the last two decades. Slums are considered to be the major issue within many urban areas; particularly problems related to transportation, population, health and safety. India is one of the fastest developing countries with many metropolitan cities (e.g. Mumbai, Pune, Bangalore, Hyderabad, Delhi and Chennai). To explore the effect of rehabilitation of slums on urban sustainability, part of Mumbai was selected as a case study. Compared to the other metropolitan cities in India, Mumbai is one of the biggest metropolitan regions and capital of the state of Maharashtra with many slums varying in sizes. In addition, every year millions of rupees are being spent to resettle and rehabilitate slums to make Mumbai sustainable. It is reported that around 6 percent of the total land holds nearly 60 percent of the total Mumbai population (CBC, 2006). From 1980 onwards, the rate of migration and the sprawling nature of slums into the city has become In major issue, although many organisations are working towards development of Mumbai, the conditions are not conducive to achieving urban sustainable environment as most of the organisations are not working on a united front. Also, various researchers have reported that to maintain the pace of sustainable urbanisation, a holistic approach to sustainable development needs to be considered.

Considering today's poor urban environmental quality in Mumpai, there are many projects under Development and execution to improve the poor conditions. Also, the World Bank has funded many Projects with the primary aim of improving the city's land transport, health and education which affect thousands of families. The majority of families affected by urban development projects are Located in slum areas which are under consideration for resettlement and/ or rehabilitation. The aim of this research is to examine slum areas and their effects on sustainable urban development. To accomplish the above aim, a case study based approach, engaging a series of face-to-face interviews, was used. As a part of this research, an urban development project funded by the World Bank to achieve urban sustainability in Mumbai Metropolitan Region (MMR) was explored. Also, several visits to other slums and rehabilitated areas were conducted to identify the quality of life in slums and rehabilitated areas. The data collected during the face-to-face interviews, was used for descriptive analysis considering various aspects (i.e. social, educational) of urban sustainability. Through this research, the reasons for slums and problems related to slums were explored. During the research, it is revealed that some people still think that urbanisation is responsible for Unsustainable development and they are not in favour of resettlement and rehabilitation. This Suggests that to achieve successful urban sustainability, other issues such as employment, education and general awareness are also required along with low-cost mass housing

Key Words: Rehabilitation and resettlement, slums, and sustainable developments

# ANANTRAO PAWAR COLLEGE OF ARCHITECTURE, PUNE ACEDAMIC YEAR 2018-2019



Akhil Bhartiya Maratha Sikshan Parishad's Anantrao Pawar College of Architecture, Pune Savitribai Phule Pune University, India 2018-2019

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Savitribai Phule Pune University Identification No. PU/PN/Arch/462/2014, DTE CODE 6837

Ref.No-APCOA/OFF 298/

/2018-2019

DATE: 28/02/19

#### CERTIFICATE

This is to certify that the Thesis titled "Natural Healing and Tranquility Centre" by Gujar Atul Pandurang submitted to Anantrao Pawar College of Architecture, Pune (Affiliated to Savitribai Phule Pune University) in Partial Fulfillment of Degree Course of Bachelor of Architecture is a bonafide work completed under the guidance of Dr. Rajendra Koli.

Prof. Sharayu Magdum

Thesis Co-coordinator

Internal Guide

Dr. Rajendra Koli Principal

External Examiner

Sign and Date

# 1.Introduction:

# 1.1.Introduction

This thesis introduces a new perspective on the delivery of healthcare, primarily preventative primary care. The design of this project demonstrates how the design of a healthcare facility can improve the overall wellness of a community. Through an integrated wellness platform facility that promotes social interaction, physical activity, and making healthy lifestyle choices, the wellness of the community will be improved. Figure 0.1 shows a perspective of the natural healing and tranquility centre. Natural Healing: Physical and Spiritual Healing (in a Powerful and Nurturing Setting), examines how healing spaces in a clinical setting can influence the healing process of cancer patients undergoing treatment or who have been affected by the disease; providing a solution to incorporate both natural healing spaces and the necessary technological medical infrastructure. Nature and humans are interconnected with one another and should to be treated in a holistic way. The location for this cancer treatment and rehabilitation center is in Knife River, Minnesota, between Duluth and Two Harbors. The intent of this center is to help patients connect with nature to help aid in the healing processes. Nature has long been thought of as a source that can impact our wellbeing. Exposure to nature can not only make people feel better emotionally, but physically as well. Any environment a person is exposed to has the ability to either increase or decrease stress which in turn can impact our bodies. The things we see hear, or experience can affect our moods and how certain systems in our bodies are working. Nature can also be soothing to people, we tend to find trees, plants, and water captivating which can distract us from physical discomfort. Architecture that incorporates nature can have an impact on its everyday users. Including such spaces, like healing spaces, in our healthcare system can have an influence on patient outcomes.

# 1.2. Significance of topic:

The Health and Wellness Center is committed to delivering the highest quality of health services which include prevention, promotion, and medical care for all students, faculty, and staff. The confidentiality of patient health is of utmost importance in achieving a level of trust and satisfaction. Incorporated into the philosophy of the Health and Wellness Center is the integration of treating the whole person — mind, body, and spirit. Every year, approximately fourteen million people are diagnosed with cancer worldwide. Of these fourteen million people, eight million will die of the disease. The United States alone will account for about 1,600,000 of the people who will be diagnosed and about 590,000 of the people who will lose their battle with cancer. Cancer patients often face difficult decisions, undergo intensive treatments, and deal with emotional discress. The is thesis will examine how healing spaces in a clinical setting can influence the healing process of cancer patients undergoing treatment or who have been affected by the disease; providing a solution to incorporate both natural healing spaces and the necessary technological medical infrastructure.

Anantrae Principal de Al Anantrae Pawar College of Architecture, Parvati, Pune-9 cture



### Akhil Bhartiya Maratha Sikshan Parishad's Anantrao Pawar College of Architecture, Pune Savitribai Phule Pune University, India 2017-2018

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Savitribai Phule Pune University Identification No. PU/PN/Arch/462/2014, DTE CODE 6837

DATE:

#### CERTIFICATE

This is to certify that Ms. Paryani Nisha Nandlal is a conafied student of this college studying in B.Arch, course during the academic year 2017-2018 Fourth Year second semester.

His Dissertation topic registered for Course is "HEALING ARCHITECTURE". Her dissertation and progress are satisfactory and to the best of my knowledge, she is appearing for Fourth year B.Arch. Examination in April 2018.

This college is affiliated to Savitribai Phule Pune University and approved by council of Architecture, New Delhi and all India council of Technical education, New Delhi.

Prof.Shilpa Ingawle

Dissertation Co-ordinator

Dr. Rajendra Koli

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Prof. Almas Milshikari Examiner

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External

Sign and Date



#### ABSTRACT

The intent of this dissertation is to explore how architecture can inform healing or provide spaces and events where healing can take place. We as human beings have an inner connection with our environment by physical, mental, emotional and spiritual means. Healing cannot be understood in isolation from the factors that operate in the dynamic life of an individual. These include the self, the family, the community, the environmental context within which life is carried forth, and the world of spirit or essence.

In our built environment we often interact with the buildings themselves without knowing the fact of relationship between building and surroundings. This dissertation summarizes the principals of life enhancing role of architecture and planning in the healing process. Through a theoretical approach including the introduction of healing architecture, the project defines four main parameters that should be included in the design of future spaces for social support: Functions that reflect the everyday life, materials & textures with a homely atmosphere, importance of daylight in hospitals and details with interior design in the human scale.

Stress is the body's biggest obstacle in healing, and many contemporary hospitals inflict so much stress on patients that it actually slows down healing, counteracting the medications and treatments patients receive. One of the body's most effective ways of healing is through the means of releasing endorphins which can reduce pain and swelling, lead to feelings of euphoria, modulate appetite, and enhance the immune system's response. Endorphins are natural, not addictive (unlike many drugs) and often have the same effect as traditional drugs such as morphine.

This dissertation explores the relationship between environments and the chemical reactions in the body that enable healing. The research reviews several healing spaces, comparing traditional healing spaces with contemporary ones, analysing both positive and negative examples in terms of the architecture's ability to help augment healing.

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Ref. No - APCOA/OFF/ /2021-2022

DATE: / /

# CERTIFICATE

This is to certify that the Thesis titled 'HOSPICE CARE CENTRE AT KHARGHAR, NAVI MUMBAL' by Ms. KOTLIKAR RUTUJA RAJESH submitted to Anantrao Pawar College of Architecture, Pune (Affiliated to Savitribai Phule Pune University) in partial fulfilment of the degree course of Bachelor of Architecture is a bonafide work completed under the guidance of Prof. Alamas Mirshikari.

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# HOSPICE CARE CONTRE

# TITLE: HOSPICE CARE CENTRE AT KHARGHAR, NAVI MUMBAI

#### (A) Abstract:

"Hospice is not about ending a life; it's about accomplishing it."

-Cicely Saunders, Founder of Hospice care, 1969

Hospice care is a health care speciality that is both a philosophy of care and an organized, highly structured system for delivering care to persons with life-threatening or debilitating illness from diagnosis till death and then into bereavement care for the family.

Hospice care begins after the treatment of the disease is stopped and when the person is not going to survive the illness. It should be used when a person is expected to live about 6 months or less if the illness runs its usual course. Hospice care is an important means of relieving symptoms that results into suffering and frequent visits to the respective hospital.

In a care centre or a hospital healing spaces, the patient's experience is often undervalued, overlooked by the functional and the medical treatments and busy schedules. This healthcare facility specially designed for taking care, relieving pain would help in understanding the patients and would give another perspective in the way of planning and designing spaces which in turn will help the patients to live in a happy and caring environment and to end the suffering.

There are various misconceptions in people around regarding the hospice care provisions which results into negative public perception which in-turn emerges as an obstacle in delivering the right care for the people who are in need. For this, awareness must be created in the society regarding the services that hospice care centre will provide.

Generally, in these days the users that are the patients are in dire need of homely support so the hospice care spaces will not only cater patients with need of the care but also their relatives for professional training for future references and to live with them.

Keywords: Hospice care, Comfort, healing and caring environment



# Akhil Bharatiya Maratha Shikshan Parishad's Anantrao Pawar College Of Architecture, Pune.

Savitribai Phule Pune University, Pune.

(2020-2021)

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DATE:

## CERTIFICATE

This is to certify that the Architectural Design Project titled "Residential and Educational Center For Orphans" By MS. Shitre Vedika Dhananjay submitted to Anantrao Pawar College of Architecture, Pune (Affiliated to Savitribai Phule Pune University) in Partial Fulfillment of Degree Course of Bachelor of Architecture is a bonafide work completed under the guidance of Prof. Anupama sonpitale.

Prof.Anupama Sonpitale

(ADP Co-ordinator

28

Internal Guide)

Dr.Rajendra Koli

Principal

External Examiner

Principal
Avantrao Pawar College of
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#### **ABSTRACT**

India, a land of various religion, culture and heritage is not often seen with Such characters. The various positive nature of the city is mostly shadowed by its darkness. The Urban areas are considerably filled with poor people and children on the streets. The most Affected future generations of the country, struggle as orphans in the streets of India.India leading in the youngest population in the world yet struggles with poverty and orphans. The future of the country depends upon the development of the child during his/her early day's Where they learn to survive the modern world. This childhood is often denied to these orphan kid's who mostly end up on the wrong side of the Road. According to United lions Children's Fund (UNICEF), India has 29.6 million orphaned and abandoned children.

Orphanages are home for the trillions without any background. Most of the children living there do not know their roots, they are Alive on the mercy of some. These 'Some' may be selfless or selfish They might be using these helpless kids for any of their trades including making money, getting name and fame, organ transplants, theft, murders, and even flash trades! Whom will these unfortunate children pled to?

Considering todays pandemic situation in worldwide, many of the Children becomes orphan in just blink of the eyes. Although there are many organizations with Primary aim of looking those children after sudden parental death in terms of basic livelihood, health and education. Resettlement of see children has becomes a need of the society. The aimof this study Is To design a safe Place for the orphan kids which protects and also trains them for this modern world. To accomplish the above aim, a case study based approach, engaging a series of face-to-face interviews, was used. As a part of this study, the project of social development funded by the government organizations which achieves social and emotional development of orphan children in Ahmendnagar was explored.

Key Words: Children, Resettlement, Emotional and Social development.

Anantrao Pawar Collège ef Architecture, Parvati, Pune-9



AKHIL BHARTIYA MARATHA SHIKSHAN PARISHAD'S ANANTRAO PAWAR COLLEGE OF ARCHITECTURE

# CERTIFICATE

Thereby certify that the work which is being presented entitled "CANCER CARE HOSPITAL" in the subject of Architectural project in fulfilment of the partial requirements for the award of the degree of bachelor of Architecture submitted to the Anantrao Pawar College of Architecture, Pune.

This project is the record of authentic work carried out during the academic year (2020-2021).

This is certify that the above statement made by the candidate is correct to the best of knowledge of under signed this candidate has appeared at viva at Anantrao Pawar college of architecture, Pune.

INTERNAL EXAMINER

Ar. SUNILYUMAR BHOSALE

Principal
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EXTERMACUEXAMINER

#### INTRODUCTION



A hospital is a healthcare institution that provides medical, surgical and nursing treatments to the sick or injured through specialized staff and equipment. Hospital is not just a cure centre, it is a place for cure as well as pleasant, cleanliness, healthy and mind supporting. It provides happiness, calm and make self-control.

The rapid and almost uncontrolled growth of population has put the healthcare facilities under severe pressure that are already in significant deficiency. According to WHO norms, India's proportion of hospital beds to population is less than one third of the set standards. Hence, India needs to add more bed and hospitals about two thirds of which should come up in rural areas. Architecture affects people. The architecture of hospitals contributes to the wellbeing and recovery of patients.

Cancer is one of the biggest challenges that the medical fraternity faces but also one that is rapidly evolving, especially with the advent of biologically targeted treatments and personalized cancer treatments based on genomic sequencing. It is clear that an interdisciplinary approach to integrating research, treatment and care will help address those challenges with improved outcomes, increased patient wellbeing and more effective prevention and treatments in the future. Because of the complex and lengthy treatment methods that are often required, cancer treatment is not a one-stop experience but part of a journey, involving both the patient and clinicians, potentially over several years.

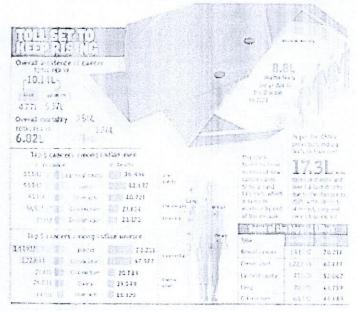
#### CANCER SCENARIO IN INDIA

Among various diseases, cancer has become a big threat to human beings globally. As per Indian population census data, the rate of mortality due to cancer in India was high and alarming with about 806000 existing cases by the end of the last century.

Cancer is the second most common disease in India responsible for maximum mortality with about 0.3 million deaths per year. This is owing to the poor availability of prevention, diagnosis and treatment of the disease. All types of cancers have been reported in Indian population including the cancers of skin, lungs, breast, rectum, stomach, prostate, liver, cervix, esophagus, bladder, blood, mouth etc.

The causes of such high incidence rates of these cancers may be both internal (genetic, mutations, hormonal, poor immune conditions) and external or environmental factors (food habits, industrialization, over growth of population, social etc.).

In view of these facts, the present article describes the status of various types of cancers in India and its comparison at global level.



National Institute of Cancer Prevention and Research (NICPI)





# AKHIL BHARTIYA MARATHA SHIKSHAN PARISHAD'S ANANTRAO PAWAR COLLEGE OF ARCHITECTURE

#### CERTIFICATE

Thereby certify that the work which is being presented entitled "HOLISTIC HEALING CENTRE in the subject of Architectural project in fulfilment of the partial requirements for the award of the degree of Architecture, Pune.

This project is

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INTERNAL EXAMINER

XTERNAL EXAMINER

# Introduction to meditation

Meditation is a method for training our minds to have a more beneficial state of mind or attitude. And this is done by getting into or generating a certain state of mind and repeating it, accustoming ourselves to that. And of course there are many, many different types of states of mind or attitudes that would be beneficial. One state of mind could be just more relaxed, less tense and worried. One state of mind could be one that is more focused. Or a state of mind that is more quiet, without just constant mental chatter and worry. One can be a state of mind with more understanding of myself, of life, etc. And one can be a state of mind with more love and compassion toward others.







# AKHIL BHARTIYA MARATHA SHIKSHAN PARISHAD'S ANANTRAO PAWAR COLLEGE OF ARCHITECTURE

#### CERTIFICATE

HOSPITAL AND THERAPY CENTRE" in the subject of Architectural project in fulfilment of the partial requirements for the award of the legree of bachelor of Architecture submitted to the Anantrao Pawar College of Architecture, Pune.

This project is the record of authentic work carried out during the cademic year (2019-2020).

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NTERNAL EXAMINER



Re-Defining Shelter: Fostering Human and Canine

An animal shelter or pound is a place where stray, lost, abandoned or surrendered animals,

mostly dogs and cats, and sometimes sick or wounded wildlife are kept and rehabilitated. Redefining this space and exploring how design settings foster rehabilitation in humans

canines through mutual interaction, incorporating a dog assisted therapy training center (AAT)

which not only helps children with autism (ASD) but also found effective for people in depression, post traumatic disorder and mental disorder (CDC). Having flexible, generous arrangements of both indoor and outdoor programs.

### Need of Animal Care

According to various literature reviews and research papers, in spite of having care centers run by enthusiasts, growing cities have led to growing demand for animal care. Existing animal centers are crowded with rescued strays and abandoned pets. Most of the funding comes from donations. Since this is not enough to raise the animals, organizations occasionally setup fund raising campaigns.

Rescued and abandoned animals need forever loving homes. Animals interact with humans for sense of comfort. Similarly humans have also benefitted by interacting with animals. There are various physiological and psychological benefits in human animal interaction.

#### Aims

It is will employ therapeutic solutions through the research of environments that foster a mand rehabilitative atmosphere and formulates a set of design principles to further enforce the quality of space. Through the study of existing typologies as well as spatial typologies that for the ter healing environments, it is possible to gather conclusions from both the successful and and increaseful spatial elements in each precedent. Nature is known to be calming and healing and, In a facility that accommodates both children and elders. It answers the need to have be anced experiences of self Patients in a hospital even recover more quickly with a window and views to the outside. GRAFT, an a architecture firm in Berlin, links design and

theare and evaluates how an environment, space, and light can promote self-healing. facility that accommodates both children ages six to eighteen and canines, we must design each typology as well as the health and wellbeing of both demographics in mind. These children

in hals have experienced some form of isolation, neglect, or abandonment, and a new typology of the animal facility will provide the opportunity for healing, and for the animals of ption.

design aims to better the lives of both troubled children and abandoned animals and act as dent for future rehabilitative and adoptive facilities.

·To provide a home for rescued animals.

\*Kennel conditions and its design.

Principal
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# Akhil Bhartiya Maratha Sikshan Parishad's Anantrao Pawar College of Architecture, Pune Savitribai Phule Pune University, India 2018-2019

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Savitribai Phule Pune University Identification No. PU/PN/Arch/462/2014, DTE CODE 6837

#### CERTIFICATE

This is to certify that the Thesis titled "Drug de-addiction and Rehabilitation center" by Mrs. Shivam Anil Nalawade submitted to Anantrao Pawar College of Architecture, Pune (Affiliated to Savitribai Phule Pune University) in Partial Fulfilment of Degree Course of Bachelor of Architecture is a bonafide work completed under the guidance of Prof. Almas Mirshikari.

Prof. Anupama sonpitale Thesis Co-coordinator Dr. Rajendra Koli Principal

Prof. Almas Mirshikari Internal Guide



TITLE: Drug De-addiction and rehabilitation center at Pune.

#### AIM:

To design an environment targeted at the patient's psychology that helps them feel comfortable while recovering from addiction and thus propose a suitable design for a therapeutic 100 bedded drug de-addiction center.

#### **OBJECTIVES:**

- To explore the different aspects of the built environment and their impact on patients psychology.
- To explore the opportunities of making architecture becoming part of healing process. Creating a space that can enhance holistic treatments for drug addicted patients.

#### LIMITATION:

- Design for 100 bed (OPD & IPD).
- Treatments limited to Detoxification, Psychiatric therapy, vocational training, family meeting and games.

#### REASONING:

- Drug addiction is chronic disease; it is a psychological and physical inability to stop consuming a chemical, drug, activity, or substance, even though it is causing psychological and physical harm.
- Drug addiction is becoming a major health problem in India, special states such as Punjab, Haryana, Delhi, Maharashtra, Rajasthan, etc are facing such problems. According to survey UN Office on Drugs and Crime, 62.5 million people use algohol, 8.75 million use cannabis, two million use opiates, and 0.5 million use sedatives or hypnotics. So it is important to control of the rate of drug addiction.

# An Architectural Design Project Report on

# WAR MEMORIAL

In partial fulfillment of requirements for degree of B.Arch. Savitribai Phule Pune University, Pune

> Submitted by Sreenidhi Patil

Under Guidance of Dr. Rajendra B. Koli

FIFTH YEAR BACHELOR OF ARCHITECTURE (DEC 2021)



ANANTRAO PAWAR COLLEGE OF ARCHITECTURE, PUNE SAVITRIBAI PHULE PUNE UNIVERSITY, INDIA

(2020-2021)

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# ABSTRACT

The primary function of a memorial of peace is to "remind" and the function of a museum is to "reflect or explain" about something. A memorial of humanity with respect to a region is made to make the humans understand the essence of humanity.

Museums all over the world collect, store and preserve ancient, archaeological objects, materials. There are various types of museums which display various artefacts as per the theme. Different places like heritage buildings, heritage homes, government buildings, personal spaces or designed structures are used as museums. In developed countries most of the bigger museums are spaces especially designed for the purpose of a museum; whereas in developing countries, mostly ancient buildings and structures are used as museums.

In developing countries, these museums have objects stored in it or just arranged. Therefore, there is a notion developed that museums are boring and unhappy places. They are mere store houses for history and are uninteresting places. In developed countries, buildings especially designed as museums serve aesthetically appealing structures which create interest and amuse people. Different approaches by the designers and architects create spaces which attract the visitors and keep them engaged in the spaces. Many museums have interactive activities related to the theme of the museum. Due to all of this museums rather than just being object storing spaces, have turned into interactive and learning spaces.

In the developing world which is dominated by computers and graphics, though there is availability of all the data and knowledge, one thing that lacks is the tangible experience with the environment. It is important for the coming generations to learn about their history and connect with it. This can be more effective when it happens tangibly.

Spaces in museums in India lack interest. It attracts people who study art, history and architecture or the ones who are keen inn knowing about the past. Many of the people find museums boring and time consuming. The spaces inside are dull, dark, not aesthetically appealing. Also, there are many secondary activities which can be associated with a museum like library, workshop areas which can increase involvement of the society in museums. The thesis deals with designing of museum spaces which are aesthetically appealing, doesn't sound uninteresting and encourage interaction aims at breaking the stereotype of a 'museum' and coming up with a solution that as modern and meets the need of present and future generations

# AKHIL BHARTIYA MARATHA SHIKSHAN PARISHAD'S ANANTRAO PAWAR COLLEGE OF ARCHITECTURE

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# CERTIFICATE

There by certify that the work which is being presented entitled "Old age home" In the subject of Architectural project in fulfilment of the partial requirements for the award of degree of bachelor of architecture submitted in the Anantrao Pawar college of Architecture, Pune.

The matter embodied in this report has not been submitted by me for the award of any other degree.

This is certify that the above statement made by the candidate is correct to the best of knowledge of under signed this candidate has appeared at viva at Anantrao Pawar college of architecture, Pune.

Principa

Awar College of Architecture, Parvati, Pune Steeting

INTERNAL

EXTERNAL

THESIS REPORT ON

### OLD AGE HOME

A REPORT SUBMITTED IN PARTIAL FULFILMENT OF
THE REQUIREMENT FOR DEGREE OF
BACHELOR OF ARCHITECTURE
UNDER

SAVITRIBAI PHULE, PUNE UNIVERSITY

AN ARCHITECTURE PROJECT DONE BY

SUCHETA BHOKARE

IN SUPERVISION OF AR. ANUPAMA SONPITALE

AKHIL BHARTIYA MARATHA SHIKSHAN PARISHAD'S
ANANTRAO PAWAR COLLEGE OF ARCHITECTURE

S.NO: 103, SHAHU COLLEGE CAMPUS, PARVATI, PUNE 1009

Principal

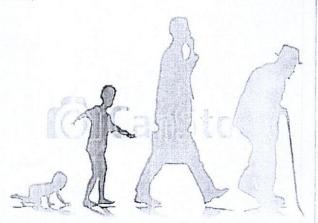
Anantrao Pawar College of Architecture, Parvati, Pune-9

### : INTRODUCTION :

: Background:

Aging is part of human development,

Elderly who are happily living with their children need to go away for education or job temporarily or permanently or A parent with aging disabilities adds an extra stress to the "child's" mind for his/her parents well being.



For this there is solutions, seniors are willing to move from their house to specially elderly designed facilities were through well thought architectural space combinations and social programs, healthy and social environment of co-existence is promoted

Studies proves that the positive social and architectural environmental conditions improves mental and physical condition of elderly people



This thesis is proposing a different type of senior Living were the environmental conditions will be able to improve the residents quality of life by bringing them together with a variety of ages and activities demonstrating how it will be beneficial on their mental Arphysical health.

Anantrao Pawar College of Arcnitecture, Parvati, Pune-9

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### Akhil Bhartiya Maratha Sikshan Parishad's Anantrao Pawar College of Architecture, Pune Savitribai Phule Pune University, Pune, India 2019-2020

Approved by Council of Architecture, New Delhi & Govt. of Maharashtra, Affiliated to Savitribai Phule Pune University, Savitribai Phule Pune University Identification No. PU/PN/Arch/462/2014, DTE CODE 6837

Place: Pune

DATE:

### CERTIFICATE

This is to certify that the Thesis titled "Institute of skill development (pimpri)
- Maharashtra" by Vijendra Radheshyam Jangid submitted to Anantrao
Pawar College of Architecture, Pune (Affiliated to Savitribai Phule Pune
University) in Partial fulfillment of Degree Course of Bachelor of Architecture
is a bonafide work completed under the guidance of Prof. Sunil Bhosale.

Prof. Sunil Bhosale
Thesis Co-coordinator

Dr. Rajendra Koli Principal

Name Internal Guide External Examiner
Sign and Date

Principal
Anantrao Pawar College of
Architecture, Parvati, Pune-9

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### Akhil Bharatiya Maratha Shikshan Parishad's

### ANANTRAO PAWAR COLLEGE OF ARCHITECTURE

S. No: 103, Shahu College Campus, Parvati, Pune – 411009. Office No.: 020-24219901 | 24213301





Approved by Council of Architecture, New Delhi & Govt. of Maharashtra, Affiliated to Savitribai Phule Pune University University Identification No. PU/PN/Arch / 462 /2014, Council of architecture code - MH 71, DTE code- AR6837

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### S. No 4 **Practical Training**



Subject Code	5201570 (SV)		
Teaching Scheme	Examination Scheme		
Student should work for Total 120 working days in organization where architecture or its allied disciplines are practiced undescupervision of a professional who is registered with COA India.	\/iva (Evternal)	75 75 25 25 NIL	
	End Semester exam	NIL	
	Total Marks	200	
	Total Credits	8	

### **Objectives:**

- To undertake practical training under the guidance of experts / professionals.
- To Learn about architect's office management and learn about the process of design, execution and management of a project.

### **Course outline:**

- Students should work in organization where architecture or its allied disciplines are carried under professional who is registered architect with COA
- In case a student undergoes Training at a firm outside India, the professional should be registered
   With the professional body governing practice in that country in addition to the registration with COA India.
  - Total duration of Professional Training will be 120 working days in IX sem

### **Submissions:**

- Prepare a separate report along with formal log book & work diary.
- Student should maintain week wise work record in a diary to summarize the work done in the office, site visits, meetings with clients, agencies, interaction with principal architect. This diary should be authenticated by the architect every week.
- Professionals should issue a certificate of performance to the student with respect to the work quality, overall approach, attitude towards office work.
- Students should produce report, log book, work diary & some drawings with permission from the employer [to indicate the kind of work s/he has carried out] at the time of sessional -viva voce examination.

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### CERTIFICATE OF PERFORMANCE

Full Name of the Trainee KEDAR S PHALKE  The Proceeding of the Trainee With Surname)
Full Name of the Trainee
(In BLOCK letters beginning with Surname)
MINIORS SAFAM WAY JUNES
Examination No.
Fifth Year B. Arch. Exam., Oct. / April 20
Name of the College Anantroo Pawar College
of varchifecture.
alaman . 2011 100004 2121
Duration of employment 2/12/2020 to 20/4 / 2021
1/1/
Full attendance put in by the Trainee days.
Maintenance of work-diary by the Trainee days.
Certified work-Report Submitted submitted potsubmitted
(prepared under the guidance of certifying authority)
Certified copies of the drawings Nos.
(personally executed by the trainee and issued for presentation at the orals of
#1
min. A2 to-max A size.)
Above certification made only after due perusal of the Principal's letter and the
relevant portion of the syllabus enclosed in the Log-Book of the 'Practical
Training Programme' Fourth Year B. Aych, Pune University.
Training Programme Fourth Year B. Arch, Pune University.

All certification found 'in order' and the entries thereof faithfully and carefully transferred to the relevant statement/s of marks certification/s as concern the candidate.

Date: 15/12/2022

Signature Prof. Venbhau Ghodke

Faculty In-Charge for

Academic Year 2022 to 2023 Man von Paca College of Arch.

STAMP / SEAL OF THE COLLEGE

**STAMPSEAL OF THE EMPLOYER ORGANISATION** 

Signature V

Date:

(N.B. All entries to be necessarily in Blue - Ink.)

Mash G. Kalokhe

Regd. Architect/Member of the Employer/Organisation

Licenced Architect

Mr. / Mrs. Stylisam Mahal Bararouti 4131021

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### ANANTRAO PAWAR COLLEGE OF ARCHITECTURE

Academic Coordinator  Academic Coordinator  Academic Coordinator	Name of Guide: 1) Internal PROF, VAIBHAV GHODKE (Sign)	Name of the Student: MAPARE ASHIYA AJEET  Roll No.:————————————————————————————————————
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Academic Coordinator	Iame of Guide: 1) Internal Vekzam Shah   2) External	expersence	roject Title: Hutomobile Julio	dent: Sandbhoz
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		Project Title : -	Roll No.:
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Name of Guide: 1) Internal Pool. Alamas Academic Coordinator 2) External Sutrao Principal

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Academic Coordinator  Academic Coordinator	Name of Guide: 1) Internal Prof. Nu pur Mishy.	Project Title: Furry Paws Wellness Center	Roll No. :	Name of the Student: NERLIKAR NIT VIVEK
Principal	(Sign) (** 4 (**)			

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Academic Coordinator	Name of Guide: 1) Internal Ax. Sunil Bhosale	Name of the Student: NAIK YASH  Roll No.:  Project Title: Botanical Research
Anantigo Pame Ponto Pont	Bhosale	SHREYATOSH  Year: 2022 - 23  Tostitute, Pune
Principal	—(Sign)————————————————————————————————————	

## ANANTRAO PAWAR COLLEGE OF ARCHITECTURE

2) External (Sign) ————————————————————————————————————	Name of Guide: 1) Internal Ar. Swail Bhasale. (Sign)——	LOTHAL, GUJARAT.	Roll No.:————————————————————————————————————	Name of the Student: PRACHI NIKHIL MAHAJAN
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# ANANTRAO PAWAR COLLEGE OF ARCHITECTURE

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# ANANTRAO PAWAR COLLEGE OF ARCHITECTURE

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		Aurangabad

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Penal College		Jame of Guide: 1) Internal PROF. AR. SUNIL BHOSALE	MADHYPRADESH, INDIA.	roject Title: PROPOSED REGIONAL SCIENCE	———— Year : ——	Name of the Student: Mr. SHIVRAJ ANANT PAWAR
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roject Title : —	FILM AND	FILM AND TELEVISION INSTITUTE AT GODA
Vame of Guide :	1) Internal PROF.	Vame of Guide: 1) Internal PROF. VAT SHAV GHODKE (Sign)
	2) External————	(Sign)
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## ANANTRAO PAWAR COLLEGE OF ARCHITECTURE

Name of the Student: Mr. SAIYFRASAV MAHESH CHAVAN  koll No.:  Year: TOTI - T3  roject Title: MULTI - STECIALITY HOSPITAL At Pingoli, Mohorbithho,  2) External  2) External  Academic Coordinator  Academic Coordinator  Principal
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2) External  Pune  Academic Coordinator	Name of Guide: 1) Internal An. & hivani	Name of the Student: MAN51 NARE6N  Roll No.:————————————————————————————————————
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## ANANTRAO PAWAR COLLEGE OF ARCHITECTURE

2) External  Pune 3  Academic Coordinator	Name of Guide: 1) Internal Prof. Ar. Almas Mirshikan	Name of the Student: Shownak Sameer Indulkar Roll No.:  Project Title: Spiritual Center for Art of LM  Hathkhamba, Ratnagnt
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2) External  Academic Coordinator  Academic Coordinator	Name of Guide: 1) Internal PROF. SHAILAJA BHAGWIA	NATION AL INSTITUTE	Roll No. : Year :	Name of the Student: MARGAJE SRUSHTI
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2) External (Sign) (Sign) (Principal	Name of Guide: 1) Internal PROF, AR. SHATLAJA BHAOWAT(Sign)	Project Title: Pastrict Sports Complex At anansori	Vame of the Student: MANE AMRUTA ANNU
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2) External  Academic Coordinator  Academic Coordinator	Name of Guide: 1) Internal DR. RAJENDRA · B. KOLI (Sign) ————————————————————————————————————	NASHIK	THE THERNATIONAL INSTITUTE OF HOTEL	Roll No.:	Name of the Student: TERDALKAR MANASI MANISH
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## ANANTRAO PAWAR COLLEGE OF ARCHITECTURE

Name of Guide: 1) Internal VAIBHAV GHODKE SIR (Sign)  2) External Ranjit Arvind Mwlay (Sign)  Remainder College (Sign)
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## ANANTRAO PAWAR COLLEGE OF ARCHITECTURE

Name of Guide: 1) Internal An. Valbhau Ghodke.  2) External Ar. Ranjit Muloy  Academic Coordinator  Academic Coordinator	Name of the Student: Khangal Arbita Porawod Roll No.: Year: 2021-22 Project Title: Minablad Centre
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# ANANTRAO PAWAR COLLEGE OF ARCHITECTURE

nator Raminarios Principal	Jame of Guide: 1) Internal Dr. Rob. Koli  2) External Ar. Ranjit Mulay (Sign)	Institute For Visually Impaired	roject Title :Year :Year :2021 - 2022	Tame of the Student: Chintamani Shweta Mukund
Principal Principal Anantrao Pawar College of Architecture, Parvati, Pune-9				

# ANANTRAO PAWAR COLLEGE OF ARCHITECTURE

Academic Coordinator	ame of Guide: 1) Internal Prof. Shailaja Bhagwat  2) External Ar. Ranjit A. Mulay	roject Title: 5 Star hotel	oll No.:————————————————————————————————————	Jame of the Student: BARDE KAUSTUSH KUMHE
Principal Anantrao Pawar College of Architecture, Parvati, Pune-9	(Sign) Rovilland		2022	XXX

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Name of Guide: 1) Internal Ar. Se An upama. S.  2) External Ar Ranjit Mudou  Academic Coordinato	Name of the Student: Inandas Siddhi Mahesh Roll No.:  Project Title: Agrantumal Schence And F
(Sign) Aud Sylvathy (Sign) Sylvathy Principal Principal Architecture, Parvati, Pune-9	Name of the Student: Inam das Siddhi Mahesh  Roll No.: Year: 2021-22  Project Title: Agricultural Schence And Rosearch Control

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Principal Principal Principantrao Pawar College of Architecture, Parvati, Pune-9	(Sign) What (Sign)	FOR ISHA FOUNDATION.	. 2 &	

# ANANTRAO PAWAR COLLEGE OF ARCHITECTURE

Jame of Guide: 1) Internal Dr. R.B. Koli  2) External Dr. Ropitt Much  Academic Coordinator  Academic Coordinator	Vanne of the Student: Ranviv Netaji Rautioll No.:  Year: 2021-5  roject Title: Tribal development Center
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## ANANTRAO PAWAR COLLEGE OF ARCHITECTURE

Academic Coordinator	Name of Guide: 1) Internal <u>Ar. Shilpa Ingawale</u> .  2) External————————————————————————————————————	Roll No.:  Project Title:  De - Addiction and Rehabilitation  De Abbichen & Duhudnilih	Name of the Student: Nundhe Gauri Kamalakant
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Principal Principal Principal Architecture, Parvati, Pune-9	-(Sign) - 1 - WWW)		

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2) External  College or College o	Name of Guide: 1) Internal PROF. SHALATA BHAGWAT	SECTOR.	Project Title: INCUBATION CENTRE FOR CONSTRUCTION	Roll No.:Year: FINAL YEAR	Name of the Student: BANDAL ANVRAG ANIL	
- (Sign)  Principal Principal Anantrao Pawar College of Architecture, Parvati, Pune-9	-(Sign) — — — — — — — — — — — — — — — — — — —		TION & PEAL ESTATE			

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# ANANTRAO PAWAR COLLEGE OF ARCHITECTURE

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Principal Principal Principal Anantrao Pawar College of Architecture, Parvati, Pune-9	(Sign) Akamae.  (Sign) Jahren (Sign)	and Center	22 FIFTH YEAR B. ARCH	ESH

# ANANTRAO PAWAR COLLEGE OF ARCHITECTURE

Academic Coordinator	Name of Guide: 1) Internal - 2) External-	Project Title:	Name of the Student :Roll No. :
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## Akhil Bharatiya Maratha Shikshan Parishad's

## ANANTRAO PAWAR COLLEGE OF ARCHITECTURE

S. No: 103, Shahu College Campus, Parvati, Pune – 411009. Office No.: 020-24219901 | 24213301





Approved by Council of Architecture, New Delhi & Govt. of Maharashtra, Affiliated to Savitribai Phule Pune University University Identification No. PU/PN/Arch / 462 /2014, Council of architecture code - MH 71, DTE code- AR6837

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## S. No 5 Code of Conduct from Council of Architecture

## COUNCIL OF ARCHITECTURE (Incorporated under the Architects Act, 1972)

## ARCHITECTS (PROFESSIONAL CONDUCT) REGULATIONS, 1989 \*

New Delhi, the 11th May, 1989

F.No. CA/1/89.- In exercise of the powers conferred by sub-section (1) read with clause (i) of sub-section (2) of Section 45 of the Architects Act, 1972 (Act No. 20 of 1972), the Council of Architecture, with the approval of the Central Government, hereby makes the following regulations to promote the standard of professional conduct/ self-discipline required of an Architect, namely:-

- 1. Short Title and Commencement:
  - 1. These regulations may be called with Architects (Professional Conduct) Regulations, 1989.
  - 2. They shall come into force on the date of their publication in the Official Gazette.\*
- 2. \*\*(1) Every architect, either in practice or employment, subject to the provisions of the Central Civil Services (Conduct) Rules, 1964 or any other similar rules applicable to an Architect, he shall:-
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- i. ensure that his professional activities do not conflict with his general responsibility to contribute to the quality of the environment and future welfare of society,
- ii. apply his skill to the creative, responsible and economic development of his country,
- iii. provide professional services of a high standard, to the best of his ability,
- iv. if in private practice, inform his Client of the conditions of engagement and scale of charges and agree that these conditions shall be the basis of the appointment,
- v. not sub-commission to another Architect or Architects the work for which he has been commissioned without prior agreement of his Client,
- vi. not give or take discounts, commissions, gifts or other inducements for the introduction of Clients or of work,
- vii. act with fairness and impartiality when administering a building contract,
- viii. maintain a high standard of integrity,
- ix. promote the advancement of Architecture, standards of Architectural education, research, training and practice,
- x. conduct himself in a manner which is not derogatory to his professional character, nor likely to lessen the confidence of the public in the profession, nor bring Architects into disrepute,
- xi. compete fairly with other Architects,
- xii. observe and uphold the Council's conditions of engagement and scale of charges,
- xiii. not supplant or attempt to supplant another Architect,
- xiv. not prepare designs in competition with other Architects for a Client without payment or for a reduced fee (except in a competition conducted in accordance with the Architectural competition guidelines approved by the Council),
- xv. not attempt to obtain, offer to undertake or accept a compission for which he knows another Architect has been selected or employed until he has evidence that the selection, employment or agreement has been

Anantrao Pawar College of Architecture, Parvati, Pune-9 terminated and he has given the previous Architect written notice that he is so doing: provided that in the preliminary stages of works, the Client may consult, in order to select the Architect, as many Architects as he wants, provided he makes payment of charges to each of the Architects so consulted,

- xvi. comply with Council's guidelines for Architectural competitions and inform the Council of his appointment as assessor for an Architectural competition ,
- xvii. when working in other countries, observe the requirements of codes of conduct applicable to the place where he is working ,
- xviii. not have or take as partner in his firm any person who is disqualified for registration by reason of the fact that his name has been removed form the Register under Section 29 or 30 of the Architects Act, 1972,
- xix. provide their employees with suitable working environment, compensate them fairly and facilitate their professional development,
- xx. recognize and respect the professional contribution of his employees,
- xxi. provide their associates with suitable working environment, compensate them fairly and facilitate their professional development,
- xxii. recognize and respect the professional contribution of his associates,
- xxiii. recognize and respect the professional contribution of the consultants,
- xxiv. enter into agreement with them defining their scope of work, responsibilities, functions, fees and mode of payment,
- xxv. shall not advertise his professional services nor shall he allow his name to be included in advertisement or to be used for publicity purposes save the following exceptions:-
  - (a) a notice of change of address may be published on three occasions and correspondents may be informed by post,
  - (b) an Architect may exhibit his name outside his office and on a building, either under construction or completed, for which he is or was an Architect, provided the lettering does not exceed 10 cm. in height,
  - (c) advertisements including the name and address of an Architect may be published in connection with calling of tenders, staff requirements and similar matters,
  - (d) may allow his name to be associated with illustrations and descriptions of his work in the press or other public media but he shall not give or accept any consideration for such appearances,
  - (e) may allow his name to appear in advertisements inserted in the press by suppliers or manufacturers of materials used in a building he has designed, provided his name is included in an unostentatious manner and he does not accept any consideration for its use,
  - (f) may allow his name to appear in brochure prepared by Clients for the purpose of advertising or promoting projects for which he has been commissioned,
  - (g) may produce or publish brochures, pamphlets describing his experience and capabilities for distribution to those potential Clients whom he can identify by name and position ,
  - \*\*(h) may allow his name to appear in the classified columns of the trade / professional directory and/or telephone directory/ website.
- \*\*(2) In a partnership firm of architects, every partner shall ensure that such partnership firm complies with the provisions of the sub-regulation (1).
- (3) Violation of any of the provisions of sub-regulation (1) shall constitute a professional mis-conduct.

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\* Published in the Gazette of India [Part III - Section IV] PP 562-564 and 566 - 567 on May 27, 1989.

\*\* Published in the Gazette of India [Part III - Section IV] PP 7108 on 3.05.2003 and PP 7594 on 21.06.2003.

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## **Architects Professional Guidelines**

Last Updated On: 05/11/2016

## Introduction

Professionals are required to discharge their obligations and commitments diligently and befitting with quality and standards of services. The laws of the land mandate that the professionals should provide services to the consumers in a required manner exercising duty of care and while doing so they should not commit any negligent act. In order to protect the interest of the consumers against the breach of duty, the deficient services have been defined by the statute and legal actions have been initiated on the erring professionals. The services rendered by architects have also been covered by the relevant laws of the country.

It has been often asked by the Architects why the legal action taken against architects whenever buildings or any other built form collapses of which they are the architects, without inquiring their faults and circumstances leading to the collapse. The suo motu action against architects have brought disrepute, embarrassment and mental agony to them, at a time, when they are unconnected with reasons responsible for the collapse of building.

We is the professional liability of architects for the buildings which have been designed and its construction and completion is supervised by them and thereafter, remain under the control and management of owners/occupants, and not under the superintendence of an architect who was originally engaged for the design and supervision of construction. In reality, the longevity and stability of the building are dependent upon the observance of safety and maintenance norms.

Although Council of Architecture has prescribed the Conditions of Engagement and Scale of Charges, the question of professional liability of architects during the post completion period of the project remained a vexed question for many years.

It has been the constant desire and earnest request of the professionals that Council of Architecture being a statutory body regulating the Architectural Education and Profession throughout the country, it should formulate guidelines on architect's professional liability. Keeping this end in view, the Council has prescribed guidelines on "Architect's Professional Liability" to make aware of the architects and the owners and occupiers of the buildings in what manner and under which circumstances an architect should be held responsible for the negligent act/ deficient services and at the same time, it highlights the clients/ occupiers' duties and responsibilities to be undertaken by them to preserve the longevity of the building. This document has been oved by the Council of Architecture at its 40th meeting held on 12th & 13th April, 2002, vide Resolution No.302, as guidelines to the Architects and user organisations / individual clients.

President Council of Architecture

## 1.0 Professional Duties of Architect:

1.1 Service: "Service", as defined under Section 2 (1) (0) of the Consumer Protection Act, 1986, means service of any description which is made available to potential users and includes the provision of facilities in connection with banking, financing insurance, transport, processing, supply of electrical or other energy, board or lodging or both, housing construction, entertainment, amusement or the purveying of news or information, but does not include the rendering of any service free of charge or under a contract of personal service. In other words, rendering professional service by an architect for "consideration" falls within the ambit of "service". The relationship between the Client and the Architect is that of recipient and provider of service. The professional services rendered by the architect mean the services rendered pursuant to the Conditions of Engagement and Scale of Charges, entered into between the Client and the Architect.

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- •1.2 Competence: An architect, being a professional, shall possess the required knowledge and skill i.e. proficiency and competence for discharging his professional duties and functions. These are governed under the provisions of the Architects Act, 1972 and the Architects (Professional Conduct) Regulations, 1989, framed thereunder.
- **1.3** Duty of care: It means duty to exercise utmost skill and care. When an architect offers professional advice/architectural services, implicitly undertakes that he is possessed of the knowledge and skill for the purpose. Thus, an architect shall bring to his task a reasonable degree of knowledge and skill and must exercise a reasonable degree of care.
- 1.4 Duties: The duties that are required to be performed by an architect for various types of projects have been prescribed by the Council of Architecture under the Conditions of Engagement and Scale of Charges for respective areas in the field of architecture. The documents stipulate the parameters within which the Architect is required to function. However, the Conditions of Engagement and matters related therewith for a given project shall be carried out in accordance with the terms and Conditions of Agreement executed between the Client and the Architect.

## 2.0 Professional Conduct:

An architect shall be required to comply with the standards of professional conduct and etiquette and a code of ethics set out in clauses (i) to (xxv), read with exceptions covered by sub-clauses (a) to (h) of sub-regulation (1) of sub-regulation 2 of the Architects (Professional Conduct) Regulations, 1989. Violation of any of the provisions of sub-regulation (1) shall constitute a professional misconduct.

**3.0** Client's - Owner's/ Occupant's duties and responsibilities:

The Owner - Client shall discharge all his obligations connected with the project and engagement of the Architect in accordance with the Conditions of Agreement as agreed upon. Further, the Client(s)-Owner(s) / Occupant(s) upon completion of the building shall maintain it properly to safeguard and preserve the longevity of the building.

## 4.0 Professional Negligence:

**4.1** Negligence: "Negligence" of an architect means failure to take reasonable degree of care in the course of his engagement for rendering professional services.

## 4.2 Deficient Service:

"Deficiency", as defined under Section 2(1)(g) of the Consumer Protection Act, 1986, means any fault, imperfection, shortcoming or inadequacy in the quality, nature and manner of performance which is required to be maintained by or under any law for the time being in force or has been undertaken to be performed by a person in pursuance of a contract or otherwise in relation to any service.

4.2.2 An architect is required to observe and uphold the Council's Conditions of Engagement and Scale of Charges while rendering architectural services in terms of Regulation 2 (1) (xii) of the Architects (Professional Conduct) Regulations, 1989. Thus, failure to provide any service/services that is/are necessary for discharge of his duties and functions for the project for which he has been engaged, amount to deficient service.

## 4.3 Exceptions:

An architect is not liable for any liability, if the damage to the building has occasioned in the following circumstances:

**4.3.1** Use of building for the purposes other than for which it has been designed.

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- **4.3.2** Any changes/ modifications to the building carried out by the owner(s)/occupant(s) without the consent or approval of the architect who designed and/ or supervised the construction of the building.
- **4.3.3** Any changes/alterations/modifications carried out by consulting another architect without the knowledge and consent of erstwhile architect or without obtaining No Objection Certificate from him.
- **4.3.4** Illegal/unauthorised changes/alteration/ renovations / modifications carried out by the owner(s)/occupant(s).
- **4.3.5** Any compromise with the safety norms by the owner(s)/ occupant(s).
- **4.3.6** Distress due to leakage from terrace, toilets, water logging within the vicinity of the building and that would affect the strength/stability of the structure or general well-being.
- 4.3.7 Lack of periodical maintenance or inadequate maintenance by the owner(s)/occupant(s).
- **4.3.8** Damages caused due to any reasons arising out of 'specialised consultants' deficient services with regard to design and supervision of the work entrusted to them, who were appointed/ engaged in consultation with the Client.
- 4.3.9 Damages caused to the building for the reasons beyond the control of the architect.
- 5.0 Professional Negligence and Deficiency in Services Professional Misconduct :

Any person aggrieved by the professional negligence and/ or deficiency in services provided by the architect, the matter shall be referred to the Council of Architecture under Rule 35 of the Council of Architecture Rules, 1973, to adjudicate whether the architect is guilty of professional misconduct or not.

## 6.0 Professional Liabilities:

- 6.1 Indemnity Insurance: The architect is required to indemnify the client against losses and damages incurred by the client through the acts of the Architect and shall take out and maintain a Professional Indemnity Insurance Policy, as may be mutually agreed between the Architect and the Client, with a Nationalised Insurance Company or any other recognized Insurance Company by paying a requisite premium.
- **6.2** Maintenance of Record: The architect is required to maintain all records related to the project for a minimum period of 4 years after the issuance of Certificate of Virtual Completion.
- Duration: The architect's liability shall be limited to a maximum period of three years after the building is handed over to / occupied by the owner, whichever is earlier.

## 7.0 Nature of Liability:

An architect is liable for the negligent act which he committed in the performance of his duties. The action against an architect can be initiated by the Client on satisfying the following conditions:

- (a) There must exist a duty to take care, which is owed by an architect to his client.
- (b) There must be failure on the part of an architect to attain that standard of care prescribed by law, thereby committed breach of such duty;

## and

- (c) The client must have suffered damage due to such breach of duty.
- **7.1** Disciplinary action under the Architects Act, 1972

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- •If an architect is found guilty of professional misconduct, he is liable for disciplinary action by the Architecture under Section 30 of the Architects Act, 1972.
- 7.2 Civil and Criminal action in the Courts of Law
- 7.2.1 The disciplinary action taken by the Council of Architecture against the architect who has been found guilty of professional misconduct does not absolve him of his liabilities under the Code of Civil Procedure, 1908 and the Code of Criminal Procedure, 1973, if any.

Some of the relevant laws include, The Law of Torts, The Consumer Protection Act, 1986 and The Indian Penal Code 1860, etc.

\* Prescribed under regulation 2(1)(xii) of the Architects Professional Conduct Regulations, 1989. This revised document was approved by the Council of Architecture at its 40th Meeting held on 12th and 13th April, 2002, vide Resolution No. 303.

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वामाबिद अधिनियम, 1972 के अंतर्गत भारत मस्कार का एक स्वायत माविधिक निकाय (An Autonomous Statutory Body of Goyl, of India, under the Architects Act. 1972)

Ref. No. CA/377/2021 (Syllabus/Traffic)

October 28, 2021

## TO THE HEADS OF ALL THE ARCHITECTURAL INSTITUTIONS IMPARTING RECOGNIZED ARCHITECTURAL EDUCATION

Subject: Inclusion of Traffic Awareness subject in the syllabus of B. Arch course-reg.

Dear Sir/Madam,

This is to inform you that Council in its 75<sup>th</sup> Meeting held on 28<sup>th</sup> and 29<sup>th</sup> August 2021 approved for the inclusion of Traffic Awareness subject in the syllabus of B. Arch course, as an elective subject. A copy of the syllabus is enclosed herewith for necessary action in the matter.

It is requested to kindly keep the Council posted with the action taken in the matter.

Thanking you,

Yours faithfully

R.K. Oberoi

Registrar

Encl: As above

As disassed with RKB/PP/SKB the subject to be tell an electric for 4th year (Sem II) for A.Y. 2011-22

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## Road Safety and Civic Sense

Credit: 01

Duration: 01 hour/week

Objective: To introduce the concepts, principles, tools and aids of Road Safety and Civic Sense to the students of B.Arch. To acquaint them with the design and safety standards for roads. Also inculcate the practice of safe road behaviour and civic sense among them.

Methodology: Lectures, Tutorials and Case Studies.

1. Introduction to Road Safety

Road as an active space, Types of Users, User Behaviour, Sensory Factors like Vision and Hearing in User

Types of Vehicles: Heavy Vehicles, Light Motor Vehicle, Two Wheelers, Auto-Rickshaw, Bicycles and Cycle Rickshaw, Non-Motorised Vehicles.

Vehicle Characteristics: Dimensions, Weight, Turning Radii, Braking Distance, Lighting System, Tyres, etc.

2. Typology of Roads: Components and Design

Road Classification: National Highways, State Highways, District Roads (MDR and ODR), Village Roads Urban Road Classification: Expressways, Arterial, Sub-Arterial, Collector, Local, Service Roads, One-Way, Design of Roads: Cross-Sectional Elements- Right of Way, Carriageway, Median, Shoulders, Sidewalk,

Lanes, Cycling Track, Green Strip, Curbs, Camber, etc. Spatial Standards for the Cross-Section Design. Relationship between Road Design and Road Safety.

## 3. Intersections

Types of Road Intersections: Basic Forms of at-grade Junctions (T, Y, Staggered, Skewed, Cross, Scissors, Rotary, etc. Grade Separated Junctions (with or without interchange): Three-Leg, Four-Leg, Multi-Leg, etc.

Design of Intersections: Design and Spatial Standards for Traffic Islands, Turns, Turning Radii, Directional Lanes, Pedestrian Crossings, Median Openings, Traffic Calming Components like Speed Breakers and

Design Considerations for Diverging, Merging, and Weaving Traffic.

Location and Design for Traffic Signals.

4. Pedestrian Circulation and Barrier Free Design

Requirement of Pedestrian Infrastructure: Sidewalks and Footpaths, Recommended Sidewalk Widths, Pedestrian Crossings, Pedestrian Bridges, Subways, Cycle Tracks, etc.

Barrier Free Design: Location and Design Standards for Ramps for Wheel Chair Access, Other Provisions like Tactile for Visually Challenged etc.

Safety Provisions: Pedestrian Railings, Anti-skid Flooring, Pedestrian Signal, Walk Button, etc.

5. Traffic Signs and Road Markings

Type for Traffic Signs: Principles and Types of Traffic Signs, Danger Signs, Prohibitory Signs, Mandatory Signs, Informatory Signs, Indication Signs, Direction Signs, Place Identification Signs, Route Marker Signs, etc. Reflective Signs, LED Signs. Static and Dynamic Signs. Standards for Traffic Signs: Location, Height and Maintenance of Traffic Signs

Types of Road Markings: Centre Lines, Traffic Lane Lines, Pavement Edge Lines, No Overtaking Zone Markings, Speed Markings, Hazard Markings, Stop Lines, Pedestrian Crossings, Cyclist Crossings, Route

Direction Arrows, Word Messages, Marking at Intersections, etc.

Material, Colour and Typography of the Markings.

6. Traffic Signals, Traffic Control Aids, Street Lighting

Traffic Signals: Introduction, Advantages, and Disadvantages

Signal Indications: Vehicular, Pedestrian and location of the Signals. Signal Indications, Vernound, Signals, Red, Amber, Green Signals and its Significance, Flashing Signal Signal Face, Illustration of the Signals Control of Sanals

Warrant of Sinnals Co-ordinated Control of Sanals

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Traffic Control Aids: Roadway Delineators (Curved and Straight Sections), Hazard Markers, Object Markers, Speed Breakers, Table Top Crossings, Rumble Strips, Guard Rails, Crash Barriers etc.

Street Lighting: Need for Street Lighting, Type of Lighting, Illumination Standard, Location and Intermediate

## 7. Road Accidents

Nature and Types of Road Accidents (Grievously Injured, Slightly Injured, Minor Injury, Non-Injury, etc.) The situation of Road Accidents in India (Yearly), Fatality Rates, etc.

Factors (and Violations) that cause accidents, Prevention and First Aid to Victims Collision Diagrams and Condition Diagrams exercises.

Traffic Management Measures and their influence in Accident Prevention.

## 8. Road Safety and Civic Sense

Need for Road Safety, Category of Road Users and Road Safety Suggestions. INFO Precautions for Driving in Difficult Conditions (Night, Rain, Fog, Skidding Conditions, Non-Tunctional Traffic

Types of Breakdowns and Mechanical Failures. Accident Sign (Warning Light, Warning Triangle, etc.)

Introduction to Concept of Civic Sense and its relationship to Road Safety: Importance of Civic Sense, Road Etiquettes and Road User Behaviour, Rules of Road, Right of the Way. Providing Assistance to Accident Victim. Sensitisation against Road Rage.

9. Traffic Regulations, Laws & Legislations

Indian Motor Vehicles Act (Chapter VIII: Control of Traffic to be discussed in detail) Regulations Concerning Traffic: Cycles, Motor Cycles and Scooters, Rules for Pedestrian Traffic, Keep to the Left Rule, Overtaking Rules, Turning Rules, Priority Rules, Hand Signals, etc. Speed and Hazard Management. Penal Provisions.

National Road Safety Policy, Central Motor Vehicle Rules, State Motor Vehicle Rules

Suggestive Readings:

1. Introduction to Traffic Engineering, R Srinivasa Kumar

2. Traffic Engineering and Transport Planning, LR Kadiyali

3. Book on Road Safety Signage and Signs, Ministry of Road Transport and Highways, Government of India 4. MORT&H Pocketbook for Highway Engineers, 2019 (Third Revision)

5. Publications by UTTIPEC namely, Street Design Guidelines, UTTIPEC Guideline for Road Markings, UTTIPEC Guideline and Specification for Crash Barriers, Pedestrian Railing and dividers, UTTIPEC Standard Typical Crossing Design

6. Street Design Standards as provided in TimesSavers, Neuferts etc.

7. Publications by Indian Road Congress.

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