


SSR 2019-20 to 2023-24	
Criteria 3- Research, Innovations and Extension	
3.3.2 Number of research papers per teachers in the Journals notified on UGC website during the last five years	




SMEF's Brick Group of Institutes, S. No. 50/3, Undri, Pune - 411028 | M:+91 8380886066 | W: www.brick.edu.in

2019-20 to 2023-24

Criterion 3 – Research, Innovations, and Extensions


Key Indicator 3.3- Research Publication and Awards

**3.3.2 Number of research papers per teachers in the Journals
notified on UGC website during the last five years**

SSR 2019-20 to 2023-24	 BRICK <small>SCHOOL OF ARCHITECTURE</small>
Criteria 3- Research, Innovations and Extension	
3.3.2 Number of research papers per teachers in the Journals notified on UGC website during the last five years	

Index (content)

1. Flow Chart.....
2. Summary Table.....
3. Reference Documents.....

SSR 2019-20 to 2023-24	 BRICK <small>SCHOOL OF ARCHITECTURE</small>
Criteria 3- Research, Innovations and Extension	
3.3.2 Number of research papers per teachers in the Journals notified on UGC website during the last five years	

Flow chart


3.3.2

Number of research papers per teachers in the Journals notified on UGC website during the last five years

2019-20 to 2023-24


Faculties and students writing in collaboration

Year	23-24	22-23	21-22	20-21	19-20
No. of papers	15	1	1	0	0


SSR 2019-20 to 2023-24	
Criteria 3- Research, Innovations and Extension	
3.3.2 Number of research papers per teachers in the Journals notified on UGC website during the last five years	

Summary Table


	3.3.2 Number of research papers per teachers in the Journals notified on UGC website during the last five years (10)								
	Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISSN number	Link to the recognition in UGC enlistment of the Journal /Digital Object Identifier (doi) number		
							Link to website of the Journal	Link to article/paper/abstract of the article	Is it listed in UGC Care list/Scopus/Web of Science/other, mention
	2023-24								
1	आयोध्या ते आयोध्या	Dr. Vaidehi Lavand	Architecture	Parivartanac ha Vatsaru	December 2023	2250-3145	http://www.pvatsaru.com/pvatsaruweb/frontend/sapadakyalekh		UGC Care list

SSR 2019-20 to 2023-24	
Criteria 3- Research, Innovations and Extension	
3.3.2 Number of research papers per teachers in the Journals notified on UGC website during the last five years	


2	Understanding role of Local and Royal Engineers in 19th Century India though Literature sources	Dr. Vaidehi Lavand	Architecture	Sanshodhak	March 2024	2394-5990	https://ugccare.unipune.ac.in/apps/1/Content/Files/pdf/Bharatiy%20Itihas%20ani%20Sanskriti-%20April-March.%202020-2021.pdf	UGC Care list
4	Beyond Concrete and Costs: Unveiling the Artistry and Comfort in Affordable Housing Materials	Manali Deshmukh	Architecture	Sanshodhak	March 2024	2394-5990	https://ugccare.unipune.ac.in/apps/1/Content/Files/pdf/Sanshodhak-%20March.%202020-2021.pdf	UGC Care list

SSR 2019-20 to 2023-24	
Criteria 3- Research, Innovations and Extension	
3.3.2 Number of research papers per teachers in the Journals notified on UGC website during the last five years	


5	Integrating Crafts in Architectural Design Education: Literature Review	Ar. Sharduli Joshi	Architecture	Sanshodhak	March 2024	2394-5990	https://ugccare.unipune.ac.in/apps1/Content/Files/pdf/Sanshodhak-%20March.%202023.pdf	UGC Care list
6	Brick by Brick: The Evolution of Experiential Learning in Architectural Studies	Vishal Dayani & Ar. Sharduli Joshi	Architecture	Sanshodhak	March 2024	2394-5990	https://ugccare.unipune.ac.in/apps1/Content/Files/pdf/Sanshodhak-%20March.%202023.pdf	UGC Care list
7	Architecture Alchemy: Unvailing the knowledge within building crafts	Akshita Rathi & Ar. Sharduli Joshi	Architecture	Sanshodhak	March 2024	2394-5990	https://ugccare.unipune.ac.in/apps1/Content/Files/pdf/Sanshodhak-%20March.%202023.pdf	UGC Care list
8	Venice Binnale - व्हेनीस बिनाले कला आणि वास्तुकलेचा अविष्कार	Dr. Vaidehi Lavand	Architecture	Sanshodhak	March 2024	2394-5990	https://ugccare.unipune.ac.in/apps1/Content/Files/pdf/Sanshodhak-%20March.%202023.pdf	UGC Care list

SSR 2019-20 to 2023-24	
Criteria 3- Research, Innovations and Extension	
3.3.2 Number of research papers per teachers in the Journals notified on UGC website during the last five years	


							3.pdf		
9	मंदिर स्थापत्यातील द्वि व त्रिमितीय कलाविष्कारांचा अनुभव मंदिर स्थापत्यातील द्वि व त्रिमितीय कलाविष्कारांचा अनुभव	Sneha Dharmavat & Ar. Sudhir Deshpande	Architecture	Sanshodhak	March 2024	2394-5990	https://ugccare.unipune.ac.in/apps/1/Content/Files/pdf/Sanshodhak-%20March.%202023.pdf		UGC Care list
10	Durga Puja; An ephemeral expression of Art, Architecture and Culture in Kolkata	Prajakta Chakravarty	Architecture	Sanshodhak	March 2024	2394-5990	https://ugccare.unipune.ac.in/apps/1/Content/Files/pdf/Sanshodhak-%20March.%202023.pdf		UGC Care list
11	Looming Elegance In Architecture: Integration Of Patola Patterns In Architectural Fabric	Keshav Agrawal	Architecture	Sanshodhak	March 2024	2394-5990	https://ugccare.unipune.ac.in/apps/1/Content/Files/pdf/Sanshodhak-%20March.%202023.pdf		UGC Care list
12	Festivals of India; Temporary on the	Shraddha Mahore	Architecture	Sanshodhak	March 2024	2394-5990	https://ugccare.unipune.ac.in/apps		UGC Care list

SSR 2019-20 to 2023-24	
Criteria 3- Research, Innovations and Extension	
3.3.2 Number of research papers per teachers in the Journals notified on UGC website during the last five years	

	ground, Permanent in lives	Manjrekar					1/Content/Files/pdf/Sanshodhak-%20March.%2020223.pdf		
13	Art As A Space Modulator: Shaping Environments Through Aesthetic Intervention	Ar. Shweta Kalamkar	Architecture	Sanshodhak	March 2024	2394-5990	https://ugccare.unipune.ac.in/apps1/Content/Files/pdf/Sanshodhak-%20March.%2020223.pdf		UGC Care list
14	Devine Narratives Through Medium Of Arts”: Temple Architecture and Classical Dance Forms	Sireesha Mutnuri & Vaidehi Lavand	Architecture	Sanshodhak	March 2024	2394-5990	https://ugccare.unipune.ac.in/apps1/Content/Files/pdf/Sanshodhak-%20March.%2020223.pdf		UGC Care list
15	स्थापत्यकलेतून सामाजिक शाश्वतता आणि परवडणारे राहणीमन	Ar. Sudhir Deshpande	Architecture	Sanshodhak	March 2024	2394-5990	https://ugccare.unipune.ac.in/apps1/Content/Files/pdf/Sanshodhak-%20March.%2020223.pdf		UGC Care list
2022-23									

SSR 2019-20 to 2023-24	
Criteria 3- Research, Innovations and Extension	
3.3.2 Number of research papers per teachers in the Journals notified on UGC website during the last five years	

1	A Study of Water Management for Built Environment in Rural Part of Western Maharashtra	Shraddha Mahore Manjrekar, Dr. Poorva Keskar	Architecture	Education and Society	2023	ISSN 2278-6864	https://ugccare.unipune.ac.in/Apps1/User/WebA/ViewDetails?JournalId=101002970		
2020-21									
1	'Decoding 'Comprehensive Sustainability' in the Design of Affordable Housing in the Urban Context'	Ar. Sudhir Deshpande	Architecture	International Journal of Architecture, Engineering, and Construction, Vol 10, No 2 (UGC Care listed journal)	2021	(ISSN 1911-110X [print] and ISSN 1911-1118 [online])	https://ugccare.unipune.ac.in/Apps1/User/WebA/SearchList		

SSR 2019-20 to 2023-24	 BRICK <small>SCHOOL OF ARCHITECTURE</small>
Criteria 3- Research, Innovations and Extension	
3.3.2 Number of research papers per teachers in the Journals notified on UGC website during the last five years	

Reference Documents



आरक्षणाचा प्रश्न आणि राजकारण

१ ते १५ नोव्हेंबर २०२३ । किंमत २५ रु.

एकूण पृष्ठे ५२

परिवर्तनाचा
वाटसरु

चारित्र्याचे
व्यापारी



ठाण्यात 'सत्यशोधक दिंडी'तून समता, एकमय समाजाच्या मूल्यांचा जागर मुंबई, नवी मुंबईतील सत्यशोधक दिंडीत मोठ्या संख्येने सहभागी

ठाणे - महात्मा जोतिराव फुले यांनी स्थापन केलेल्या सत्यशोधक समाजाला दीडशे वर्ष पूर्ण झाल्याच्या प्रीत्यर्थ ठाण्यात सत्यशोधक दिंडीचे आयोजन करण्यात आले होते. या दिंडीत खा. सुप्रिया सुळे, मा. खा. हरिभाऊ राठोड, डॉ. आनंद तेलतुंबडे, उर्मिला पवार, अर्जुन डांगळे, महेश केळुसकर, सुधाकर यादव, एम. ए. पाटील, जितेंद्र इंदिसे, ऋता आव्हाड, केदार दिघे, अतुल गोरे यांच्यासह अनेक मान्यवर सहभागी झाले होते.

सत्यशोधक समाजाच्या स्थापनेस २०२३मध्ये १५० वर्षेपूर्ण झाली. २८ नोव्हेंबर या महात्मा जोतिबा फुले यांच्या स्मृती दिनाच्या पूर्वसंध्येला सत्यशोधक दिंडी काढण्यात आली. ठाणे शहर व जिल्ह्यात तसेच मुंबई आणि नवी मुंबईतील विविध क्षेत्रात कार्यरत असणाऱ्या अनेक सामाजिक संस्था, महिला व कामगार संघटनांच्या वतीने डॉ. प्रज्ञा दया पवार, जगदीश खैरालिया, वंदना शिंदे, मुक्ता श्रीवास्तव, निर्मला पवार, संजय भालेराव, जयंत कुलकर्णी आदींनी पुढाकार घेऊन 'सत्यशोधक विचार संवर्धन समिती, ठाणे स्थापन करण्यात आली होती. दिंडीत सहभागी सत्यशोधकांनी हातामध्ये सामाजिक लढ्यातील कर्मवीर भाऊराव पाटील, पंजाबराव देशमुख, प्रबोधनकार ठाकरे, सावित्रीबाई फुले, फातिमा शेख आदी अग्रणींची छायाचित्रे, तसेच त्यांचे विचार दर्शवणारे फलक हाती घेतले होते. महात्मा फुले यांच्या निवडक अखंडांचे फलकही हातात घेतले होते.

या दिंडीचा समारोप कॉ. गोदूताई परुळेकर उद्यानात करण्यात आला. सुरुवातीला अनुबंध, भारतीय महिला फेडरेशन, समता विचार प्रसारक संस्था, विद्रोही सांस्कृतिक चळवळ, परिसर सखी मंडळ आदी संस्थांनी गीते, पथनाट्य आदी सांस्कृतिक कार्यक्रम सादर केले. तर समारोप समारंभाच्या अध्यक्षस्थानी ज्येष्ठ कामगार नेत्या कॉ. मुक्ता मनोहर होत्या आणि सत्यशोधक समाजाचे अध्यक्ष के. इ. हरिदास हे प्रमुख पाहुणे होते. हरिदास यांनी कॉ. मुक्ता मनोहर आणि अब्दुल कादर मुकादम यांचा फुले पगडी देऊन सत्कार केला. या कार्यक्रमाचे सूत्रसंचालन दत्ता बाळसराफ आणि वृषाली विनायक यांनी केले तर आभार प्रदर्शन समितीच्या वतीने जगदीश खैरालिया यांनी केले.

हा कार्यक्रम यशस्वी करण्यासाठी अभय कांता, सुब्रतो भट्टाचार्य, ओसामा रावळगावकर, निर्मला पवार, अजय भोसले आदी अनेक कार्यकर्त्यांनी प्रयत्न केले. कार्यक्रमाची सांगता राष्ट्रगीताने आणि 'सत्य की जय हो' या घोषणेने झाली.



परिवर्तनाचा वाटसरू

वर्ष २३वे / अंक १५वा / किं. २५ रु. / १ ते १५ डिसेंबर २०२३

संस्थापक संपादक

अभय कांता*

संपादक

प्रज्ञा दया पवार । नारायण भोसले । माधुरी दीक्षित । सुरेंद्र जोधळे

कार्यकारी संपादक

देवेंद्र इंगळे । दिलीप चव्हाण

संपादक मंडळ

प्रज्वला तट्टे । वीरा राठोड । कलीम अजीम । राही श्रु. ग. । वृषाली मगदूम

व्यवस्थापक

सोनाली काजळे

संपर्क पत्ता

५९/६४, कौस्तुभ अपार्टमेंट, दुकान नं. ७ ए, कसबा पेठ, फणी आळी तालमीजवळ, पुणे ४११०११

भ्र. ९७६३२०६२१२ इमेल : pwatsaru@yahoo.com वेबसाईट : www.pvatsaru.com

वर्गणीचे दर : वार्षिक : ६०० रु., त्रैवार्षिक : १,६०० रु., दशवार्षिक : ५,००० रु., सॉफ्ट कॉपीसाठी वार्षिक २०० रु., सॉफ्ट + छापील ७०० रु. वरील पत्त्यावर ई मनी ऑर्डर, चेक किंवा डिमांड ड्राफ्टने वर्गणी पाठवावी. 'परिवर्तनाचा वाटसरू' या नावाने चेक / डिमांड ड्राफ्ट असावा.

बँक ट्रान्सफरने वर्गणी भरण्यासाठी तपशील

बँक ऑफ इंडिया, फर्ग्युसन कॉलेज रोड शाखा, पुणे । बचत खाते : Pariwartanacha Vatsaru

बचत खाते क्र. : 051410110013969 । आयएफएससी क्र. : BKID0000514 । एमआयसीआर क्र. : 411013014

Google Pay साठीचा मोबाईल नंबर : 8888708963 । युपीआय पेमेंटसाठी वर बारकोड दिला आहे.

*पी. आर. बी. कायदानुसार संपादकीय जबाबदारी

ISSN: 2250-3145

युजीसी केअर ग्रुप 1 मध्ये 'परिवर्तनाचा वाटसरू' पाक्षिकाचा मल्टिमिडिया प्लिनरी या कोटीक्रमांतर्गत समावेश केला आहे.

परिवर्तनाचा वाटसरू । १ ते १५ डिसेंबर २०२३ ३

अनुक्रम	एक रेघ	
	तोडगट्ट्याचे आदिवासी काय म्हणू पाहतायंत ?	५
	अवधूत डोंगरे	
	समसामायिक	
	आरक्षणाचा प्रश्न आणि राजकारण	१६
	प्रकाश पवार	
	निमित्ताने	
	मधुमेहाचा विळख्यातून सुटका	२२
	सुभाष दोंदे	
	विशेष लेख	
	अयोध्या ते अयोध्या	२७
	वैदेही लावंड	
	विश्वार्थ	
	सद्यकालीन जागतिक घडामोडी : नोंदी आणि अन्वयार्थ	३३
	संजीव चांदोरकर, हर्षवर्धन पुरंदरे	
	झरोका	
	उर्दूचे हिंदू साहित्यिक	३८
	सय्यद शाह वाएज	
	आदरांजली	
	माणसांमधला 'राजामाणूस' हरवला	४१
	दीपक बोरगावे	
	कविता	
	अभय खाखा अनु. अवधूत डोंगरे	४४
	प्रशांत असनारे	४५
	इंग्रजी ग्रंथ परिचय	
	मर्चंटस् ऑफ व्हर्च्यू	४६
	अजिंक्य घावटे	

अंकात व्यक्त झालेल्या मतांशी संपादक, संपादक मंडळ सहमत असेलच असे नाही.

मलाच नेस्तनाबूत करत राहतात
बेचिराख वास्तूंचे उद्ध्वस्त अवशेष
सगळेच सहिष्णुतेच्या मारताहेत गप्पा
मी घुसमटून भरून काढतोय अनुशेष!

साहिल कबीर

अयोध्या ते अयोध्या

वैदेही
लावंड

१९९२मध्ये पूर्व नियोजित पद्धतीनं बाबरी मस्जिद पाडली गेली. यामुळे प्रचंड दंगे, वाद, जाळपोळ, दंगलीमध्ये असंख्य बळी हे सगळे घडले. काय आहे वास्तूमध्ये इतकं? का या वास्तूंच्या नेस्तनाबूत करण्याने कोणाची अस्मिता उंचावते अथवा दुखावते किंवा कुठल्या एका शाहीचे महत्त्व वास्तूमधून कसं काय प्रकट होऊ शकतं? काय सांगतो इतिहास आणि महत्त्वाचं म्हणजे वास्तुकलेचा इतिहास. अशा उद्ध्वस्त करण्याने किंवा नवनिर्मितीतून इतिहास पुन्हा लिहिण्याचा, तयार करण्याचा प्रयत्न होतो का?

बाबरी मस्जिद मुघलांचा पहिला राजा बाबर याने सोळाव्या शतकात मीर बाकी यांच्याकडून बांधून घेतली. मुघल राज्यकर्त्यांच्या काळातील वास्तुकलेचा इतिहास हा भारतामध्ये इंडो इस्लामिक या नावाने ओळखला जातो. ही शैली भारतामध्ये विकसित झाली, ज्याच्या तोडीचं काम जगात इतरत्र कुठेही बघायला मिळत नाही. अनेक प्रयोग, प्रयत्न करत कुठलीही वास्तुकला विकसित होत असते. कोणतीही इमारत कुठल्याही देशात, गावात बांधली जाते तेव्हा, जरी ती कुठल्याही बादशहाने बांधलेली असेल अथवा पेशव्यांच्या सरदारांनी, त्यावर काम करणारे कारागीर त्या भागातलेच असतात. काही वैशिष्ट्यपूर्ण कामांसाठी बाहेरून कारागीर बोलावले जातात. हे कारागीर, कामगार आपल्या अनुभवांचे संचित घेऊन येतात आणि या प्रकल्पांवर काम करतात. त्या अर्थानी जरी इमारतीची रचना, कल्पना मुघल बादशहाची असली तरीही ती जमिनीवर उतरवणारे हात आणि विचार करणारे मेंदू हे केवळ मुस्लिम अथवा हिंदूच होते असं म्हणता येत नाही. त्या अर्थानेही या काळातील वास्तुकला इंडो इस्लामिक म्हणूनच ओळखली जाते. याचे आविष्कार आपल्याला त्या वास्तूच्या बांधण्याची शैली, कलाकुसर व भिक्तीचित्र यातूनही आढळून येते.

नदी आणि पिण्यासाठी पाणी ह्या जगण्यासाठी अत्यावश्यक अशा गोष्टी आहेत. नद्यांच्या, तलावांच्या किनाऱ्यांवरती अनेक समूह वसले,

लेखिका एसएमइएफच्या ब्रिक स्कूल ऑफ
आर्किटेक्चरमध्ये प्राध्यापिका आहेत. त्या कॉन्झर्वेशन
आर्किटेक्ट असून वास्तुकलेचा इतिहास या
विषयामध्ये डॉक्टरेट आहेत.

lavand.vaidehi@gmail.com

करण्यात आला होता. या नियमांनुसार या भागामध्ये कोणतीही नवीन इमारत बांधण्यासाठी परवानगी नसते आणि कुठल्याही प्रकारच्या विकासासाठी परवानगी घेणे आवश्यक असते. तरीही जवळजवळ ४.५ लाख स्केअर मीटर बांधकाम तोडण्याची परवानगी घेतली गेली आणि ती लगेचच मिळाली सुद्धा. नवीन संसद ६५,००० स्केअर मीटर इतकी बांधण्यात आली तर नवीन १० इमारती ज्यांना प्रत्येकी सात मजले आहेत यांची उंची इंडिया गेटपेक्षा थोडी कमी असली तरीही या बांधकामाने या परिसराचे दृश्य स्वरूप बदलून टाकले जाणार आहे हे निश्चितच.

या सर्व नियमांचे पालन न करता अहमदाबाद येथील वास्तु विशारद बिमल पटेल यांना सहजच हा १३,४५० करोडचा प्रचंड खर्चिक प्रकल्प मिळतो आणि सर्व

पर्यावरणीय परवानग्या (environmental clearance) मिळून याच्या बांधकामाला कोव्हिड-१९च्या काळात सुरुवात होऊन २०२४च्या आधी साधूंच्या उपस्थितीत येथील पहिल्या इमारतीचे उद्घाटन होते ह्या वेगाला खरोखरच तोड नाही. नवीन संसद भवनाचे उद्घाटन सर्व धर्मगुरूंनी येऊन करणे हेही खूप सूचक आहे. लोकशाही धर्माच्या वर्चस्वाने चालवली जाईल आणि सर्वधर्मसमभाव, विविधतेतून एकता ही सर्व लोकशाहीची तत्त्वे गुंडाळून ठेवली जात आहेत याचेच हे एक प्रतीक आहे. राजपथचे नाव बदलून कर्तव्यपथ करणे हाही त्याचाच एक भाग. सध्या आपल्याकडे गावांची नावे बदलणे, रस्त्यांची नावे बदलणे अशी अनेक हिंदुत्ववादी रूपकं दिसून येतात त्याचेच अजून एक उदाहरण.

याच प्रकारे प्रगती मैदान दिल्ली येथील हॉल ऑफ

नवीन कर्तव्य पथ आराखडा त्रिमितीय दृश्य

Ref: <https://centralvista.gov.in/>





UGC CARE LISTED
ISSN No. 2394-5990

इतिहासाचार्य वि. का. राजवाडे मंडळ, धुळे या संस्थेचे त्रैमासिक ॥ संशोधक ॥

पुरवणी अंक ४० – मार्च २०२४ (त्रैमासिक)

- शके १९४५ ● वर्ष : ९२ ● पुरवणी अंक : ४०

संपादक मंडळ

- प्राचार्य डॉ. सर्जेराव भामरे
- प्रा. डॉ. मृदुला वर्मा
- प्राचार्य डॉ. अनिल माणिक बैसाणे
- प्रा. श्रीपाद नांदेडकर

* प्रकाशक *

श्री. संजय मुंडडा

कार्याध्यक्ष, इ. वि. का. राजवाडे संशोधन मंडळ, धुळे ४२४००१
दूरध्वनी (०२५६२) २३३८४८, ९४२२२८९४७१, ९४०४५७७०२०

Email ID : rajwademandaldhule1@gmail.com

rajwademandaldhule2@gmail.com

कार्यालयीन वेळ

सकाळी ९.३० ते १.००, सायंकाळी ४.३० ते ८.०० (रविवारी सुट्टी)

लेख सदस्यता वर्गणी : रु. २५००/-

विशेष सूचना : संशोधक त्रैमासिकाची वर्गणी चेक/ड्राफ्टने
'संशोधक त्रैमासिक राजवाडे मंडळ, धुळे' या नावाने पाठवावी.

अक्षरजुळणी : सौ. सीमा शिंदे, पुणे.

टीप : या नियतकालिकेतील लेखकांच्या विचारांशी मंडळ व शासन सहमत असेलच असे नाही.



अनुक्रमणिका

१. **Shrimad Bhagwat Geeta - A best psychological way of living life**
- Dr. H. L. Rathva ----- ७
२. **Effectiveness of Communicative Approach in Developing Speaking Skill of The Students**
- Dr. Amita Marshal ----- १०
३. **Exploring the Nexus of Teachers' Work Task Motivation: A Thematic Analysis**
- De Alkaben J Macwan ----- १६
४. **Demystifying God in The Shiva Trilogy of Amish Tripathi**
- i) Dr. Navita N Malani, ii) Dr. Beena Vinod Rathi ----- २१
५. **Compulsion and Contestations: North Korea's Relation with China**
- Lakhan Bir Meena ----- २४
६. **Integrating Indian Knowledge System into Science Education: A Holistic Approach to Learning**
- i) Dr. Dipti Khanna, ii) Dr. Dhananjay Deshmukh ----- २८
७. **Gross Domestic Product (GDP) Growth Boost the Indian Economy**
- Dr. Kotgire Manisha Arvind ----- ३१
८. **Stress Coping Skills Among Adults During Covid 19 Pandemic**
- i) Pravinkumar Ajabrao Mohod, ii) Dr. Shafiq Yusufkhan Pathan ----- ३५
९. **A Study of Factors Influencing the Selection of Commerce Stream at Higher Secondary Level**
- Dr. Bhumika Barot ----- ३९



१०. **Understanding role of Local and Royal Engineers in 19th Century India through Literature sources**
 - Dr. Vaidehi Lavand ----- ४४
११. **Availability of Household Amenities in Haryana : Analysis of 2011 Census**
 - HIMANSHU ----- ५२
१२. **An Exploratory Study on Integration and Implementation of Digital Learning Attributes in National Education Policy Framework**
 - Dr. Sonali Gadekar ----- ५६
१३. **Re-Validate Servqual Scale in The Context of Higher Education Institution**
 - Pramod Kumar N. ----- ६२
१४. **Impact of E-Content Module on Swachhta: A Study of Four-Year Integrated B.A-B.Ed Students**
 - i) Juhi Gupta, ii) Reecha Jral, iii) Prof. Ritu Bakshi ----- ७०
१५. **Woman and Indian Justice Delivery System: A Study on Role of Women in Speedy Justice Delivery System**
 - i) Praveen Kumar Maurya, ii) Dr. Pradeep Singh ----- ७६
१६. **A study of Perception and Experiences of Parents of Children with Disabilities regarding Inclusive Education**
 - i) Bhanu Priya, ii) Dr. Kiran, iii) Monika ----- ८१
१७. **Title of the Paper- Examining Educational Access and Quality for Children Living in Slums: An Exploratory Study**
 - i) Sonali Sambyal, ii) Dr. Kiran, iii) Manisha Chowdhary ----- ९४
१८. **Human Mind, Bodhicitta And Altruism**
 - Dr. Radha Krishna Baror ----- १०५



Understanding role of Local and Royal Engineers in 19th Century India through Literature sources

Dr. Vaidehi Lavand

PhD, Professor

SMEF'S Brick School of Architecture, Pune, India.

Email: vaidehilavand@brick.edu.in

Ph. +918551902204

Abstract :

Colonial rule had influenced 19th-century eclectic architecture as a form of imperial expression in India. European concepts of architecture reached the Asian subcontinent through visuals, literature such as treatises and Manuals published by Royal engineers, paintings, and pattern books. Royal engineers worked in collaboration with local engineers, contractors, and masons giving identity to many historic towns in their way. Several instances from this Neoclassical, Neo-Gothic and Indo-Saracenic phases are evident in India.

Local dialects, culture, people, accessibility, security, Material variations construction techniques, and traditional knowledge of local contractors and artisans sometimes alleviated and occasionally made the newly developed architectural edifices vulnerable too. This research paper tries to compile literary resources available to understand different approaches adopted in the process of organizing and implementing architectural projects in India during the 19th century. Research is conducted with the help of manuscripts, archival resources and secondary resources.

Key words : Eclectic Architecture, Royal Engineers, Local Contractors, Eclectic Architecture, Treatise and Manuals

Introduction :

While understanding the context of 19th century architecture in India it is not just enough to analyze architecture in isolation from society and

administrative forces those affected in the creation of 19th century eclectic style in Indian soil. Changes in Administration had a very significant impact on overall social systems existing in India. Starting from British East India Company to the monopoly of Victorian reign India had gone through several changes. British governors-general headquarter was located in Calcutta. After the mutiny of 1857 East India Company handed over the governance to Queen-Empress in London whose representational power in the form of Viceroy settled in Calcutta.

Systemic changes influencing education, social hierarchy, top to bottom approach and cultural changes we could observe during this period. Figure 1 Macro and micro level changes could be observed in terms of Macro level changes such as Town planning Technology such as Railway, power loom, in architecture Construction techniques and Materials. Whereas at Micro Level Typological variations, adaptation of western Architectural models, Details, Style and at the end formation of Cultural Symbols could be seen significantly. Vocabulary of existing medieval towns changed to module of Grid Iron pattern.

In terms of architectural language, it was probably simpler theoretically for the engineers and officers to construct the built form in their known language rather immediate adaptation of Indian traditional form.

The focus of research paper is upon how literary sources primarily such as Archival sources, treatise, manuals, pattern books, professional papers (Brandreth, 1879) in Indian engineering and many

Education and Society
(शिक्षण आणि समाज)

Special Issue
UGC CARE Listed Journal
ISSN 2278-6864

Education and Society

Since 1977

The Quarterly dedicated to Education through Social Development and
Social Development through Education

April 2023

(Special Issue-1/ Volume-II)



INDIAN INSTITUTE OF EDUCATION

128/2, J. P. Naik Path, Kothrud, Pune - 411 038



UGC CARE LISTED
ISSN No. 2394-5990

इतिहासाचार्य वि. का. राजवाडे मंडळ, धुळे या संस्थेचे त्रैमासिक ॥ संशोधक ॥

पुरवणी अंक ५६ – मार्च २०२४ (त्रैमासिक)

- शके १९४६
- वर्ष : ९२
- पुरवणी अंक : ५६

संपादक मंडळ

- प्राचार्य डॉ. सर्जेराव भामरे
- प्राचार्य डॉ. अनिल माणिक बैसाणे
- प्रा. डॉ. मृदुला वर्मा
- प्रा. श्रीपाद नांदेडकर

अतिथी संपादक

- डॉ. पूर्वा केसकर
- डॉ. मनाली देशमुख
- डॉ. वैदेही लावंड

* प्रकाशक *

श्री. संजय मुंदडा

कार्याध्यक्ष, इ. वि. का. राजवाडे संशोधन मंडळ, धुळे ४२४००१
दूरध्वनी (०२५६२) २३३८४८, ९४२२२८९४७१, ९४०४५७७०२०

Email ID : rajwademandaldhule1@gmail.com

rajwademandaldhule2@gmail.com

कार्यालयीन वेळ

सकाळी ९.३० ते १.००, सायंकाळी ४.३० ते ८.०० (रविवारी सुट्टी)

लेख सदस्यता वर्गणी : रु. २५००/-

विशेष सूचना : संशोधक त्रैमासिकाची वर्गणी चेक/ड्राफ्टने
'संशोधक त्रैमासिक राजवाडे मंडळ, धुळे' या नावाने पाठवावी.

अक्षरजुळणी : सौ. सीमा शिंत्रे, पुणे.

टीप : या नियतकालिकेतील लेखकांच्या विचारांशी मंडळ व शासन सहमत असेलच असे नाही.



अनुक्रमणिका

१. **Study of Dance Philosophy Translated into Architecture**
 - 1. Sanika Patil, 2. Ar. Prof. Aniruddha Jogalekar ----- ५
२. **“Devine Narratives Through Medium Of Arts”: Temple Architecture and Classical Dance Forms**
 - 1. Sireesha Mutnuri, 2. Vaidehi Lavand, 3) Suraj Bhunje ----- १०
३. **Commonalities between expressions In indian classical dance and Basic design principles**
 - 1. Miss. Aastha Bhujade, 2. Prof. Pradnya Patki ----- १८
४. **Looming elegance in architecture: Integration of patola patterns in architectural fabric**
 - Keshav Agrawal ----- २५
५. **Durga Puja; An ephemeral expression of Art, Architecture and Culture in Kolkata**
 - Prajakta Chakravarty ----- ३०
६. **Festivals of India; Temporary on the ground, Permanent in lives “Our culture touches the ground lightly”**
 - 1. Shraddha Mahore Manjrekar, 2. Akshata Bhadale, 3. Pallavi Sharma --- ३६
७. **Loss of Livable Luxury: Lessons from Indian cities**
 - Deepa Desai ----- ४४



८. **The bohada mask festival of the tribes of northern maharashtra: Retracing the cultural heritage**
 - Ar. Megha Butte ----- ५१
९. **Application of local crafts in pune's theme restaurants**
 - 1. Aniket Shinde, 2. Prof. Pradnya Patki ----- ५६
१०. **Integrating Crafts in Architectural Design Education : Literature Review**
 - 1. Ar. Sharduli Joshi, 2. Dr. Mahendra Joshi ----- ६०
११. **Beyond Concrete and Costs : Unveiling the Artistry and Comfort in Affordable Housing Materials**
 - 1. Manali Deshmukh, 2. Pratik Mour ----- ६७
१२. **Digital Art And Architecture: A Fusion Shaping The Future Of Design In India**
 - 1. Madhura Naik, 2. Himika Lakhanpuria ----- ७४
१३. **Architecture Alchemy : Unveiling the Knowledge within Building Crafts**
 - 1. Akshita Rathi, 2. Ar. Sharduli Joshi ----- ८१
१४. **Expression & Performance as a Design Tool**
 - Prof. Mayuresh Shirolkar ----- ८७
१५. **Brick by Brick: The Evolution of Experiential Learning in Architectural Studies**
 - 1. Vishal Dayani, 2. Ar. Sharduli Joshi ----- ९१



१६. **Newly discovered Gadhegals from District Raigad, Maharashtra: review
of inscribed imprecations and iconography**
- Ar. Nikita Mahajani ----- ९५
१७. **स्थापत्यकलेतून सामाजिक शाश्वतता आणि परवडणारे राहणीमान**
- १. श्री. सुधीर देशपांडे, २. डॉ. मीरा शिरोळकर ----- १०५
१८. **नाट्य अविष्कार, नेपथ्य रचना आणि अवकाश निर्मिती**
- १. ओंकार खेबुडकर, २. वैदेही लावंड ----- ११०
१९. **व्हेनीस बिनाले – कला आणि वास्तुकलेचा अविष्कार**
- वैदेही लावंड ----- ११५
२०. **मंदिर स्थापत्यातील द्वि व त्रिमितीय कलाविष्कारांचा अनुभव**
- १. स्नेहा धर्मावत, २. श्री. सुधीर देशपांडे ----- १२१





“Devine Narratives Through Medium Of Arts”: Temple Architecture and Classical Dance Forms

1. Sireesha Mutnuri

Author

SMEF's BRICK School of Architecture,
Pune, Maharashtra

2. Vaidehi Lavand & Suraj Bhunje

Co-Author:

Abstract :

“Expressing divinity and culture through a medium of narratives.”

This study explores the intricate relationship between temple architecture and classical dance, focusing on the Brihadishwara and Nataraja temples in South India. Analyzing case studies and articles, it examines connections between Kuchipudi and temple iconography, emphasizing spatial geometry and the Natya Shastra's influence on design. The research highlights the symbiotic relationship where architecture and dance inspire each other. It aims to rekindle Kuchipudi's essence and advocate for a habitat integrating temple elements to support artists. This initiative seeks to preserve Kuchipudi's heritage in Andhra Pradesh, ensuring cultural traditions and fostering holistic growth across economic, lifestyle, and cultural dimensions.

Key Words : divinity, narrative, Temple architecture, Symbiotic relation, Kuchipudi heritage.

INTRODUCTION :

Indian mythology aims to procure divinity, sanctity, and prosperity through storytelling, expressed through music, dance, painting, and design. The evolution of arts and occupations is tied to historical movements in Vedas, Puranas, and shastras, where the art of designing evolved into architecture. Similarly, dance forms developed from principles in the Natya Shastra. King Indra's request to Vishwakarma for a theater marked the beginning of Indian classical dance forms, demonstrating the parallel evolution of architecture and dance. Temple sculptures and devadasis'

performances illustrate the deep interrelation and coexistence of these arts. Temple architecture, based on cosmic geometry from the Natya Shastra, uses spatial orientation to express divinity. Sculptures depict human figures in dance gestures like mudras, bedas, mandalas, and charis, aiming to convey stories and create a serene atmosphere. This connection shows how temples and performing arts mutually inspire each other, blending history and traditions.

1. LITERATURE REVIEW:

1.1. NARRATIVES AND INTRICACIES PERSPECTIVE

Perspective shapes the storytelling process, capturing the essence of a story's motive. Spaces, like stories, convey narratives directly or indirectly. To maintain the essence of a space, various art forms and elements—such as light, orientation, and structural components—are used. These elements interrelate intricately to express the space's essence. Temples, for instance, guarantee peace, calm, and divinity, achieved through these elements and inspired art forms.

1.2. PLANNING PRINCIPLES OF TEMPLE ARCHITECTURE

A Hindu temple's floor plan symbolizes the mandala in sacred geometry, precisely laid out to reflect cosmic principles. This mandala, typically a nine-square grid, is divided into smaller squares, each representing a deity with unique attributes. The VastuPurusha Mandala serves as the basis for Hindu temple



Looming elegance in architecture: Integration of patola patterns in architectural fabric

Keshav Agrawal

Author

1329, Despande Layout, Wardhaman Nagar, Nagpur – 440008

SMEF's Brick School Of Architecture, Undri, Pune

E-mail : hoackeshavagrwal@gmail.com

Abstract :

For centuries, Patola sarees have epitomized Indian textile artistry, distinguished by intricate geometric motifs and a vibrant color palette. This paper focuses on an exploration of the seamless possible integration of these iconic Patola saree motifs into the fabric of contemporary architecture. Embracing the geometric elegance and rich hues inherent in Patola, the study delves into the nuanced translation of these elements onto architectural canvases, envisioning a dialogue between tradition and modernity. Architectural elements such as facades, pergolas, staircases, flooring tiles, pivoted panels, glass panels, and installations become the tactile medium for this creative intersection. The methodology encompassed a multifaceted approach, employing visual analysis, case studies, and design correlations of Patola saree design elements with its possible integration in architectural fabric. This research is also supported with interviews of experts, local artists etc. The inferences and analysis indicates creative synergy not only visually enriching but also contributing to architectural spaces and cultural heritage. This study highlights the tangible benefits of the integration, correlative design opportunities. It further fosters a deeper connection between traditional craftsmanship and modern architectural expression.

Key Words : Patterns, Patola Saree, Geometric Motifs, Architectural Integration, Cultural Expression, Design Innovation, Architectural Fabric

1. Introduction :

The bright symphony of colors and elaborate geometric motifs adorning Patola sarees have contributed to its timeless beauty and embedded themselves into Indian culture for generations (Mili, 2014). As architectural realms develop, appreciating the wealth of cultural legacy becomes more than just an artistic endeavor; it also becomes a duty to create narratives that endure over time (Garg, 2020).

Representing the heartland of Gujarat, India, Patola sarees are a tribute to the brilliance of ancient Indian textile workmanship. Their geometric accuracy and kaleidoscope of colors convey historical narratives and skilled craftsmanship that have lasted the test of time. Culturally significant and rich in motifs (Mili, 2014), Patola sarees offer a chance to incorporate these stories into the structure of our constructed environment.

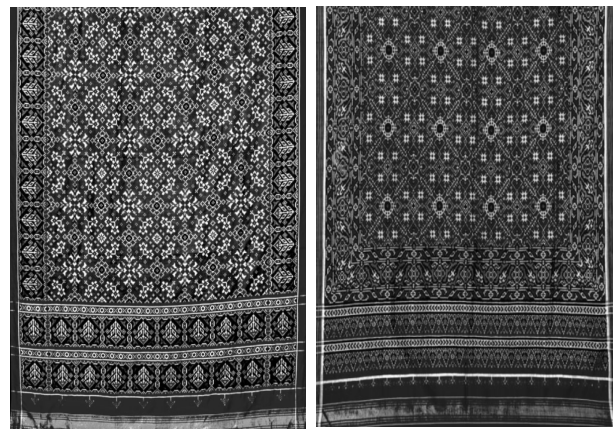


Image 1.1. Patola Sarees: Navratna Bhat Green (L) & Vohra Gaji (R)
Source : Ar. Rahul Salvi

Durga Puja; An ephemeral expression of Art, Architecture and Culture in Kolkata

Prajakta Chakravarty

Associate Professor

S M E F's Brick School of Architecture, Pune

Abstract :

This research intends to delve into the cultural tapestry of Durga *Puja*¹ in Kolkata, emphasizing its role as a community expression of art, craft, and architecture. Focusing on the cultural contextuality, it examines how the Puja Pandal, becomes a transient manifestation of Indian art, on the canvas of the City, within the Bengali neighbourhood or a “*Para*.”² The entire City comes alive to celebrate, becoming a stage, pampering the people with multi-sensory experiences.

The article uses a step-by-step methodology of analysis, that dissects Durga Puja, through transformation of the Bengali ‘*Para*’, to Puja *Pandals*³, highlighting the evolution of these structures into architectural marvels that reshape Kolkata’s urban landscape and create community memories through immersive experiences. The study explores the intricate interplay of time and Space in shaping this ephemeral experience through various case examples. It questions how current affairs and contemporary trends influence the thematic choices of the Puja, while also scrutinizing the qualitative aspects and symbiotic relationship between the intricate pandal designs and the urban architecture of the surrounding neighbourhood, while simultaneously understanding the logistical and economical impact of the festival. This research aims to enrich our understanding of Durga Puja as a multifaceted cultural phenomenon in Kolkata by unravelling the dynamic connection between Time, Space, and artistic expression.

Key Words : Durga Puja, Pandal, ‘*Para*’, Community expression, Cultural tapestry, Interplay of time and space, Art, Craft, Urban Architecture.

Introduction :

Durga Puja, tracing back to the 16th century, was initially observed by *zamindar*⁴ families in colonial Calcutta (the earliest known Puja was at the home of Sabarna Roy Choudhury family since 1610). Over time, these became more public and transformed into *Barowari*⁵ in 1909. These festivities have infused the city with profound creativity, introducing new elements that signify inclusivity, celebration, and joy.



Figure 1 Abstract Artwork of Ma Durga

Source – Author : Prajakta Chakra

In 2021, UNESCO declared the festival as an Intangible Cultural Heritage of Humanity. Durga Puja in Kolkata always transcends religious



Festivals of India; Temporary on the ground, Permanent in lives “Our culture touches the ground lightly”

1. Shraddha Mahore Manjrekar

Associate professor,
S.M.E.F.'s Brick School
of Architecture, Pune,

2. Akshata Bhadale

Alumnus,
S.M.E.F.'s Brick School
of Architecture, Pune,

3. Pallavi Sharma

Professor, Amity School
of Architecture and Planning, Haryana

Abstract :

Humans have an affinity towards permanency; hence civilizations and built-environment have occupied a permanent space on the surface of the Earth. In contradiction of this, Shrikrishna had stated in Shrimadbhagwadgeeta that the only thing which is permanent in life is the ‘Change’. Shrikrishna emphasized on ‘Love’, ‘Affection’, ‘Devotion’ and also ‘Detachment’. The tangible and intangible aspects of Indian culture reflect all these emotions in arts, crafts, architecture and planning. Indian culture has the importance of the festivals and rituals that artistically change the dynamics of spaces. The pop-up installations, structures, street arts, temporary markets, people and celebrations are true reflections of the philosophy of Shrimad bhagwadgeeta, as these tangible aspects of festivals involve people in the activities, with full devotion and dedication, despite knowing that these things will conclude in the form of “Visarjan”. The literal meaning of the Sanskrit word “Visarjan” is- sacrifice and detachment from the physical form of the favourite things. Festivals throughout India, including but not limited to Rathayatra of Jagannathpuri, Durga Puja, Ganeshotsav, Navaratri, and all forms of fairs and Teerthayatras involve sustainable ways of celebrating life. These occasions occupy a big space in the

calendar and cities (time and space). However, they originally planned to leave no physical mark on land after their conclusion, and still make huge space in the experience of life. This paper describes some festivals, and art forms of India, that reflect on this notion of a sustainable way of living and celebrating within a built environment at three hierarchical levels, i.e., buildings, neighborhoods and cities.

Keywords : Space dynamism of the festivals, pop-up structures, enthusiasm, celebrations, art forms, spatial conversion, sustainability of Indian festivals

1. Introduction

The traditional Indian way of living is more grounded in life skills and spirituality (Bhaumik P 2003). The experience of life is enhanced by celebrations and customs. The culture has a significant role in bringing humans close to each other, by planning, organizing, celebrating the festivals and concluding them. The indispensable factor for the display of culture is ‘Space’ (Shanta Pragyan Dash, 2021). Space refers to the physical environment where cultural activities and expressions take place. It plays a crucial role in shaping and preserving different cultures, as it provides the necessary conditions for people to interact and create artefacts that reflect their



Integrating Crafts in Architectural Design Education : Literature Review

1. Ar. Sharduli Joshi

Department of Architecture
Lovely Professional University, Punjab
Shardulijoshi@brick.edu.in,

2. Dr. Mahendra Joshi

Department of Architecture
Lovely Professional University, Punjab
mahendra.25672@lpu.co.in

Abstract :

Architectural design education has long been a cornerstone of the built environment's evolution, reflecting the changing values and aspirations of society. As contemporary architectural practice grapples with issues of sustainability, cultural preservation, and a renewed appreciation for craftsmanship, it becomes increasingly crucial to examine the role of crafts in architectural design education. The analysis encompasses a rich repository of scholarly publications, utilizing advanced bibliometric tools to unveil evolving trends and connections within the field. this study reveals the historical lineage of crafts in architectural education Through systematic examination. Additionally, this paper provides a thematic analysis of the literature, identifying key recurring themes that shape the discourse. The study synthesizes the findings and further explores pedagogical implications. It emphasizes how the integration of crafts can enrich architectural education. The findings emphasize how integrating crafts enriches architectural education, contributing to ongoing discussions. The paper highlights the enduring relevance of crafts in shaping the profession and the built environment. It provides a foundation for a holistic and sustainable approach, bridging historical craftsmanship with contemporary challenges.

Keywords : Architectural Design, Education, Crafts, Cultural significance, Craftsmanship, Pedagogy

Introduction :

The transmission of craft skills to architects' traces back to historical traditions rooted in guilds, apprenticeships, and traditional teaching (Doshi, 1986). Guilds, such as those in medieval Europe, governed architecture and provided rigorous training to apprentices under master craftsmen, emphasizing discipline and specialized skills. Apprenticeships offered emerging architects a blend of formal education and practical experience, enabling them to acquire essential skills (Cohen, 2014). Traditional teaching in architecture underscored holistic education, integrating theory and practice, and highlighting the importance of craftsmanship, drawing, proportion, and materiality (Chhaya & Dil Sukh, 2004). These historical systems profoundly influenced architectural pedagogy, emphasizing the enduring value of hands-on learning and craft skills.

However, contemporary trends, driven by capital-intensive development, prioritize rapid production of space, often disregarding holistic spatial conception (Chauhan, 1999). This neglect of historical narratives results in an erosion of cultural and regional identity perceptions, rendering identity increasingly ambiguous and fragile (Charalambous & Christou, 2016). Addressing this challenge requires recalibrating design processes to embrace evolving identities (Mehta, 2001), yet many educational institutions have struggled to adapt to this imperative, maintaining pedagogical structures inherited from the West without substantial modification.



Beyond Concrete and Costs : Unveiling the Artistry and Comfort in Affordable Housing Materials

1. Manali Deshmukh

SMEF's Brick School of Architecture,
Pune, India

E-mail : manalideshmukh@brick.edu.in,

Tel : +91 94223 41010

2. Pratik Mour

SMEF's Brick School of Architecture,
Pune, India

Abstract :

This article explores the transformative role of materials in reshaping affordable housing paradigms. Beyond conventional financial considerations, materials emerge as catalysts for aesthetic expression, human comfort, and a profound sense of community identity. By guiding case studies through an imaginative reconstruction, we unveil instances where materials transcend their utilitarian role, becoming mediums for artistry and sustainable design. The article touches the three primary realms that make architecture art – expression, comfort, and attachment, by confronting challenges in shifting perspectives, underscoring the necessity for a nuanced approach. The article aims to evoke a call to action through a storied format which moves the architects and developers to adopt a more holistic perspective on materials, encouraging a departure from conventional norms. This exploration envisions a future where affordable housing transcends mere functionality, emerging as a dynamic canvas that balances the trifecta and all aspects across the board.

Keywords : Art, Architecture, Affordable Housing, Thermal Comfort, Community, Belongingness.

1. Introduction :

In the relentless pursuit of cost-efficiency and optimization, the realm of affordable housing has often been overshadowed by the unyielding focus on floor space index (FSI) and financial pragmatism. Amidst these calculations and blueprints, there exists an overlooked element that holds the potential to

reshape the very essence of our housing structures — the materials themselves. While the optimization of square footage and the balance sheets is undeniably crucial, we have inadvertently relegated two vital considerations to the periphery: the aesthetics that define our living spaces and the thermal comfort that dictates our well-being.

Affordable housing, with its utilitarian design and standardized materials, has long been associated with functionality over form, cost over comfort. This oversight is not only a missed opportunity for artistic expression but also a neglect of the profound impact that materials can have on creating a space that residents proudly call home.

It is time to question this status quo and recognize materials as more than mere structural components. The aim is not only to optimize financially but to harmonize aesthetically, to provide thermal comfort, and to evoke a deep sense of belongingness within the community through their aesthetic. In this exploration, we will unravel the forgotten influence of materials, tracing their ability to transcend the mundane and become conduits for artistic expression, thermal well-being, and a stronger communal identity. It is time to reimagine affordable housing as more than a utilitarian necessity, but as a canvas where materials play a crucial role in crafting spaces that resonate with the hearts and histories of those who call them home.

2. The Forgotten Influence of Materials :

Beyond the structural constraints and financial considerations that often govern the blueprints of



Architecture Alchemy : Unveiling the Knowledge within Building Crafts

1. Akshita Rathi

Author

Student @ SMEF's Brick School
of Architecture, Pune
rathiakshi4@gmail.com
8875754309

2. Ar. Sharduli Joshi

Co-author

Assistant Professor @ SMEF's
Brick School of Architecture, Pune
shardulijoshi@brick.edu.in
9423268065

Abstract :

Experts estimate that ten thousand hours are needed to become the best at any given craft. Whether it's glassblowing, wood joinery, music, or the culinary arts, the goal is to create something that can be seen, heard, touched, and/or used. The idea of craft seems to be fading in popularity. By embarking on a journey to uncover the intricate skills and hidden wisdom inherent in traditional crafting techniques, this study seeks to illuminate the invaluable contributions these age-old practices can make to contemporary architecture. Through a combination of case studies and qualitative analysis, this research aims to identify the nuanced expertise and tacit knowledge that underpin traditional crafts. Furthermore, it explores how integrating these traditional techniques into modern architectural projects can lead to innovative design solutions and sustainable building practices.

Keywords : craft, building craft, human-material interaction, traditional craft, sustainability, sustainable architecture, experiential learning, Shigeru Ban

Introduction :

Crafts endure as a means of skillful interaction with materials, underscored by a craft ethos that emphasizes both practical skill and a sense of tradition (Adamson, 2007) (Sennett, 2008) (Minna Huutilainen, 2018). Amidst the pervasive influence of digital technology, crafts retain their tactile, corporeal nature, offering a respite from the constant inundation of digital interfaces and

screen-based activities. In settings such as stitch-and-bitch circles or knitting groups, crafts catalyze face-to-face interactions, providing a valuable contrast to online engagement (Bryan-Wilson, 2013). Moreover, crafting involves transforming abstract ideas into tangible artefacts, reflecting a process that intertwines design with inventive learning. This dynamic suggests that crafting not only involves the mastery of existing techniques but also encourages exploration and innovation, thereby embodying a form of creative expression deeply rooted in human ingenuity (Seitamaa-Hakkarainen, 2011).

Aim :

To explore the intricate skills and hidden wisdom within traditional crafts, ultimately enhancing both architectural theory and practice.

Objectives :

1. To investigate the historical significance of traditional building crafts in architecture.
2. To explore how traditional crafting practices can inform and enrich contemporary architectural theory and practice.
3. To examine case studies that demonstrate the integration of traditional building crafts into architectural projects.

Methodology :

A case study research is done for the paper to explore the intricate skills and knowledge embedded in building crafts.



Brick by Brick: The Evolution of Experiential Learning in Architectural Studies

1. Vishal Dayani

Author

Student @ SMEF's Brick School of
Architecture, Pune
vishal.dayani48@gmail.com
8425900250

2. Ar. Sharduli Joshi

Co-author

Associate Professor @ SMEF's Brick School
of Architecture, Pune
shardulijoshi@brick.edu.in
9423268065

Abstract :

Experiential learning, often described as “learning by doing,” has emerged as a transformative force in both architectural education and real-life practice, shifting from the periphery to the forefront. The imperative of adaptability propels this evolution in an ever-changing world and a contemporary understanding of learning processes. Grounded in the Experiential Learning Theory (ELT), as elucidated by prominent scholars, this paper delineates a dynamic model anchored in the dual dialectics of action/reflection and experience/abstraction. Global research underscores the cross-cultural relevance of ELT, highlighting its significance across diverse societal contexts. Employing a methodology centered on literature review, this paper aims to analyze the evolutionary trajectory of experiential learning and its profound impact on architectural education. By scrutinizing ELT's role in education reform and beyond, this study seeks to illuminate the transformative potential of experiential learning paradigms.

Aim :

To explore the historical development, current practices, and future potentials of experiential learning within architectural education.

Objectives :

1. To examine the historical roots of experiential learning in architectural education.

2. To investigate the theoretical frameworks and educational philosophies underpinning experiential learning in architectural studies.

Methodology :

A literature review methodology is used for the paper to explore the evolution and significance of experiential learning in architectural education.

Introduction :

Experiential learning has risen from the periphery of education to the foreground in the recent decade. What accounts for this shift in perspective? First, there has been a dramatic change in our conception of learning and how we perceive data. Second, in today's rapidly changing environment, there is an increased demand for flexibility and the capacity to leverage previous knowledge and experience in new and different ways. (Linda H. Lewis, 1994)

For over 35 years, research based on experiential learning, the theory has advocated for and contributed to this shift in perspective. Experiential learning theory draws on the work of prominent twentieth-century scholars who gave the experience a central role in their theories of human learning and development - notably John Dewey, Kurt Lewin, Jean Piaget, William James, Carl Jung, Paulo Freire, Carl Rogers, and others – to develop a dynamic, holistic model of the process of learning from experience and a multi-linear model of adult development. ELT is a dynamic view of learning based on a learning cycle driven by the resolution of



स्थापत्यकलेतून सामाजिक शाश्वतता आणि परवडणारे राहणीमान

१. श्री. सुधीर देशपांडे

एस एम ई एफ्स ब्रिक स्कूल ऑफ आर्किटेक्चर, पुणे

२. डॉ. मीरा शिरोळकर

भानूबेन नानावटी कॉलेज ऑफ आर्किटेक्चर, पुणे

स्थापत्य कलेमुळे समाजात पायाभूत सुविधांचा विकास झाला. बदलत्या संदर्भासोबत ह्या स्थापत्य कले मधल्या संरचनांमध्ये बदल घडत गेले. आणि जगण्यातली शाश्वतता मिळवण्यासाठी झालेल्या पायाभूत सुविधांमधून परत शाश्वत जगण्याचाच शोध घ्यायची गरज आता भासू लागली आहे. हा शोध परत एकदा स्थापत्यकलेकडेच जातो. न परवडणारे राहणीमान ही साऱ्या जगात भेडसावणारी समस्या आहे. सामाजिक, आर्थिक, पर्यावरण, राजकीय धोरणांमधील बदलांचा परिणाम हा शहरी परिसरातल्या राहणीमानावर होत असतो. पुणे शहराची ओळख ही सांस्कृतिक, पेशनर लोकांचं शहर, त्यानंतर शैक्षणिक आणि आता आय टी शहर अशी बदलत गेली. जशी शहराची ओळख बदलली तशी शहरी विकासाची व्याख्याही बदलत गेली. आणि त्याचा परिपाक म्हणून येथील घराच्या किंमतीही उंचावत जात आहेत. पण परवडणाऱ्या किंमतीतले घर म्हणजे परवडणारे राहणीमान होईलच असे नाही. या तुलनेत परवडणारे सामाजिक वातावरण आणि सामाजिक शाश्वतता आजूबाजूला असणे आवश्यक असते. हा शोधनिबंध स्थापत्यकलेनुसार सामाजिक शाश्वततेमधील महत्वपूर्ण बाबींवर प्रकाशझोत टाकतो. हे संशोधन काही ठळकपणे प्रकाशित झालेल्या शोध साहित्यावर आधारलेले आहे. तसेच हे संशोधन गिडन्सच्या सामाजिक सिद्धांताशी असलेला संबंधही प्रस्थापित करते. हे संशोधन शहराशी साधर्म्य साधणारे स्थापत्य आणि प्रादेशिक संदर्भ, लोकघनतेचे विकेंद्रीकरण आणि राहणीमानानुसार गृहोपयोगी संवादी जागा असे सामाजिक शाश्वतता पूरक परिमाणांवर चर्चा करते. हा अभ्यास सामाजिक शाश्वतता आणि परवडणारे राहणीमान यांचा परस्पर पूरक संबंध स्थापत्य कलेतील संरचनेसोबत अधोरेखित करते.

महत्वाचे शब्द : सामाजिक, शाश्वतता, साधर्म्य, राहणीमान, स्थापत्यकला

१ परिचय :

आत्तापर्यंत सामाजिक शास्त्रांमध्ये समाजाच्या तीन महत्वाच्या गरजा सांगितलेल्या आहेत आणि त्या म्हणजे अन्न, वस्त्र आणि निवारा. निवारा ही गरज मानव निर्मित स्थापत्य कलेमधून भागवली गेली. आधी गुहा, कुटी, आजूबाजूला मिळणाऱ्या दगड विटांपासून बांधीव वास्तू आणि आता आर. सी. सी., स्टील, ग्री कास्ट आणि अनेक प्रकारच्या प्रणाली स्थापत्यकलेमध्ये आल्या. या स्थापत्य कलेमध्ये बांधकाम प्रणाली बरोबर वस्तूच्या संरचनेचाही खोलवर विचार करण्यात आला. मानवाच्या निवार्यामध्ये एक प्रकारची शाश्वतता आणण्यासाठी सामाजिक, शैक्षणिक, सरकारी, दवाखाने, मंदिरे अशा अनेक प्रकारच्या वास्तू बांधल्या गेल्या. या पायाभूत सुविधांचा विकास झाल्याने शहरीकरण आणि उद्योगांना विशेष महत्व प्राप्त झाले. अर्थकारणासही चालना मिळून विशेषतः शहरांमध्ये लोकसंख्येचे केंद्रीकरण झाले. आणि या लोकसंख्येचा शहरीकरणावर आता बोजा वाटू लागला आहे. त्यामुळे महागाई आणि न परवडणारे राहणीमान ह्यासारखे न मोजता येणारे पण लोकांच्या रोजच्या जगण्यावर मुलभूत परिणाम करणारे घटक उदयाला आले. माणसाचे महिना दरडोई आर्थिक उत्पन्न आणि त्याचा राहण्यावर होणारा खर्च याचे गुणोत्तर विविध देशांनी मांडलेले आहे (Organization for Economic Co-operation and Development, 2021). अमेरिका, कॅनडा, इंग्लंड, ऑस्ट्रेलिया यासारख्या देशांनी राहणी खर्चाचे प्रमाण हे जास्तीत जास्त महिना दरडोई आर्थिक उत्पन्नाच्या ३० टक्के सांगितलेले आहे. भारतातही हे गुणोत्तर याच प्रमाणात सांगितलेले आहे. हे प्रमाण ओलांडल्यास राहणीमान हे परवडणारे राहात नाही. आणि राहण्यातली शाश्वतेवरही याचा दूरगामी परिणाम होतो. त्यामुळे आकृती १ मध्ये दाखवल्याप्रमाणे जगण्यातल्या शाश्वतता



आकृती १ शाश्वततेचा उगम आणि शोध (स्रोत : लेखक)



नाट्य अविष्कार, नेपथ्य रचना आणि अवकाश निर्मिती

१. ओंकार खेबुडकर

असोसिएट प्रोफेसर

श्रीमती काशीबाई नवले कॉलेज

ऑफ आर्किटेक्चर, पूणे

ईमेल : onkar.khebudkargmail.com

२. वैदेही लावंड

असोसिएट प्रोफेसर

एसएम एस ब्रिक् स्कूल ऑफ

आर्किटेक्चर, पूणे

ईमेल : vaidehilavandbrick.edu.in

गोष्टवारा :

कुठल्याही कलाकृती मध्ये तिच्या निर्मिती मागे एक विचार निश्चितच असतो. नाटक हा कलाविष्कार असा आहे ज्यामध्ये हा विचार मांडण्याची ताकद सर्वाधिक आहे. विविध पद्धतीने प्रेक्षकांबरोबर संवाद साधत त्यातली संहिता पुढे जाते. संवाद, कलाकरांचे भाव, प्रकाशयोजना, नेपथ्य या सर्वांनी मिळून लेखकाचा विचार प्रेक्षकांपर्यंत पोहचवला जातो. महाराष्ट्रातील कोल्हापूर मधील प्रत्यय नाट्य संस्था, त्यांनी सादर केलेली अनेक नाट्य कलाविष्कार हे एक विचार घेऊन येतात आणि दृश्य स्वरूपात व्यक्त होतात. ही एक नाट्य चळवळ आहे जी वेगवेगळ्या पद्धतीने समाज उपयोगी संवेदनशील विचार प्रेक्षकांपर्यंत प्रोसिनियम थिएटर मार्फत पोहोचवण्याचा प्रयत्न करतात. यामध्ये नेपथ्य रचना ही खूपच प्रभावकारी आणि सूचक पद्धतीने प्रत्येक नाटकांमध्ये वापरण्यात आलेली आहे. त्यामध्ये काही महत्वाच्या निर्मिती आणि त्यातील लक्षात राहिलेल्या नेपथ्यरचना यांचं विवेचन प्रस्तुत लेखामध्ये करण्याचा प्रयत्न केलेला आहे. यामध्ये स्टेज वरती दिसणारा मुख्य भाग त्यातून प्रेक्षकांना काय दाखवायचे आहे, काय दाखवायचे नाही, काय सूचक पद्धतीने मांडायचे आहे, कुठल्या रंग संगतीने मांडायचे आहे याचा विचार काळजीपूर्वक केलेला आढळतो. यातून निर्माण होणार्या अवकाश निर्मितीचा सांगोपांग विचार इथं मांडायचा हा प्रयत्न. यासाठी काही जुने दस्तऐवज, छायाचित्र, दृश्यस्वरूपाचा अभ्यास, मुलाखती, इत्यादी माध्यमांचा वापर केला आहे.

महत्वाचे शब्द : नेपथ्य रचना, अवकाश निर्मिती, प्रत्यय नाट्य चळवळ, मराठी रंगभूमि, डावा विचार आणि कलाविष्कार

पार्श्वभूमी :

प्रत्यय या नाट्यसंस्थेची स्थापना ४ सप्टेंबर १९८१ या दिवशी काही डाव्या विचाराने भरवलेले तरुण एकत्र येऊन झाली. आपल्या आवडत्या नाटक ह्या कलाविष्कारात काही

प्रायोगिक पद्धतीने राजकीय विचार नाटकातून दाखवण्याच्या दृष्टीने प्रत्यय या नाट्य संस्थेची स्थापना झाली. १९६० नंतरचा भारतीय तरुणांचा काळ हा डाव्या विचाराने भारावून टाकणारा काळ होता. वेगवेगळे लेखक वेगवेगळ्या मानवी जाणीव घेऊन येत. उदाहरणार्थ बादल सरकार, विजय तेंडुलकर, गोकुळ देशपांडे, हबीब तनवीर आणि असे अनेक दिग्गज त्या काळात लिखाण आणि नाटक यातून राजकीय विचार मांडू लागले. त्यातून वेगवेगळ्या नाट्य चळवळी उभ्या राहत होत्या. त्याच्या इतिहासात जास्त खोलावर न जाता काही इतर महत्वाच्या गोष्टींची नोंद करणं आवश्यक आहे. त्याच काळात लिटिल मॅगझीनची एक चळवळ उभी राहिली त्यात काहीतरी कमी आहे या विचाराने नाट्य या विषयाकडे एकूण फक्त करमणूक म्हणून न बघता त्या कलाविष्काराकड राजकीय दृष्टिकोनाने बघण्याचा प्रयत्न होऊ लागला.

कोल्हापूरच्या काही तरुण मुलांनी एकत्र येऊन प्रत्यय ह्या नाट्यसंस्थेची सुरुवात केली. यामध्ये काही लेखक, कवी, चित्रकार अशी मंडळी होती. त्यांनी आधुनिकता वाद व त्याची नाटकाच्या अवकाशाशी असलेली नाळ, मग नाटक करताना त्याची भाषा, त्यातील रंग, प्रकाश याचा नाटकाच्या दृश्यात्मक परिभाषेवर होणारा परिणाम या गोष्टी महत्वाच्या म्हणून त्याकडे प्रायोगिक पद्धतीने कालात्मकतेनं बघण्याचा प्रयत्न केला. प्रत्ययने मराठी नाट्य चळवळीत एक महत्वाचे केलेले काम म्हणजे जागतिक मापदंड असलेली अनेक नाटकं मराठीत सादरीकरण करण्यामध्ये त्यांचे मोठे योगदान मानले जाते (लोकमत, २०२२, Times of India, 2018). त्यातली महत्वाची उदाहरणे म्हणजे राशोमान, किंग लियर, दुशिंगराव आणि त्याचा माणूस, एका राजकीय कैद्याचा अपघाती मृत्यू, घोडा, क्राईम अँड पॅनिशमेंट, कोपन हेगन, आईन्स्टाईन आणि इतर काही. तसेच प्रत्ययने जी काही महत्वाची मराठी नाटकं सादर केली त्यामध्ये वाटा पळवाटा, उध्वस्त धर्मशाळा, उत्तर रामचरीत इत्यादी अतिशय उल्लेखनीय अशा निर्मिती म्हणता



व्हेनीस बिनाले - कला आणि वास्तुकलेचा अविष्कार

वैदेही लावंड

असोसिएट प्रोफेसर एसएम एस ब्रिक स्कूल ऑफ आर्किटेक्चर, पूणे

ईमेल : vaidehilavandbrick.edu.in

गोषवारा :

दृष्यकलांची जागतिक पातळीवरचे दर दोन वर्षांनी वेनिस येथे आयोजित करण्यात येणारे प्रदर्शन म्हणजे वेनिस बिनाले. १८९५ मध्ये वेनिस इटलीमध्ये बिनालेच्या प्रदर्शनाची सुरुवात झाली त्याला इटलीचे एकीकरण आणि युरोपीय राष्ट्रांची निर्मिती ही पार्श्वभूमी होती. १९९० नंतर २०० ठिकाणी अशी प्रदर्शने भरवली जातात. समकालीन कलेचे प्रदर्शन हे मुख्य उद्दिष्ट असलेलं वेनिस बिनाले हे जगभरातील अनेक कलाकारांना वास्तुविशारदांना आकृष्ट करणारं असं ठिकाण आहे. वेनिस ला कायमस्वरूपी मुख्यत्वे युरोपीय राष्ट्रांचे तर काही हंगामी तिसऱ्या जगातील देश जसे की चीन, दक्षिण अमेरिकेतील काही देश, दक्षिण आशियाई देश, यांची पॅव्हिलियन पाहायला मिळतात.

व्हेनीस बिनाले मध्ये आर्किटेक्चर किंवा वास्तुकलेचे प्रदर्शन भरवण्याची सुरुवात १९८० मध्ये झाली. पूर्वी ते इतर दृश्य व सादरीकरणाच्या कला इतपतच मर्यादित होते. सदर लेखामध्ये १९१४ ला भरवण्यात आलेल्या वेनिस इटली येथील वास्तुकलेच्या बिनाले विषयीचा अनुभव शब्दबद्ध करण्याचा प्रयत्न केला आहे. १९१४ मध्ये वेनिस बिनाले चे क्युरेटर हे जगविख्यात वास्तुविशारद रिम कुल्हास हे होते. यावर्षीच्या बिनालेची कल्पना ही अबसोर्बिंग मॉडर्निझम अशी होती. ज्यामध्ये अनेक देशाच्या पवेलियन ने त्यांच्या गेल्या शंभर वर्षांच्या वास्तुशैलीचा इतिहास मांडण्याचा प्रयत्न केला. वास्तु विशारद कार्लो स्कार्पा यांनी येथील बऱ्याच पवेलियन्सची रचना केली आहे.

महत्वाचे शब्द : वेनिस बिनाले, वास्तूकला, दृश्याकला, आधुनिकतावाद, औद्योगिक क्रांती

पार्श्वभूमी :

मागील शतक आणि आधुनिकता वाद त्याचा वास्तुकलेवरील परिणाम

आता थोडं आधुनिकता वाद हा समजून घेण्याचा प्रयत्न करू. आधुनिक असणं म्हणजे वागणं जगणं बोलणं, असं या

सगळ्यातून तो दिसतो इतपत मर्यादित नाही. ही फारच गुळगुळीतपणे आधुनिकता वादाकडे बघण्याची पद्धत म्हणता येईल. आधुनिक असणं म्हणजे जे जुनं ते नाकारून देणे असा एक समज झालाय. खरं पाहता काही अंशी ते खरं पण आहे पण त्याच्याकडे इतक्या वरवर बघता येणार नाही. त्यासाठी त्याचा इतिहास समजून घेणे म्हणजेच त्यातील या चळवळीचे योगदान काय आहे हे समजणे महत्वाचे आहे . ती एक चळवळ आहे जिने समाजातल्या प्रत्येक क्षेत्रातील महत्वाच्या मुद्द्यांना प्रश्न विचारायला सुरुवात केली.

आधुनिकता वादाचा उगम हा सोळाव्या शतकात पाश्चिमात्य देशांमध्ये झाला. प्रश्न विचारायला सुरुवात झाली म्हणजे काय तर विविध क्षेत्रांवर विशिष्ट वर्गाची मक्तेदारी होती. कामगार वर्ग व सामान्य जनता यांच्या रोजच्या आयुष्यातील प्रश्नांकडे शास्त्रीय दृष्टीकोनाने बघण्यास सुरुवात झाली. त्याने राजेशाही, व्यापारी व धार्मिक वर्चस्व यांना हादरे बसायला सुरुवात झाली. लोक धर्माला, देवाला प्रश्न विचारू लागले, नवीन वैज्ञानिक विचार उदयाला आला. यामध्ये फ्रेंच राज्यक्रांती चा मोठा हातभार होता. समाजामध्ये मनुष्य केंद्री विचार होऊ लागला. वेगवेगळ्या स्तरातील समाज घटक मग ते कामगार असतील, स्त्रिया असतील, आपला आवाज वेगवेगळ्या माध्यमातून मांडू लागले. या सगळ्याला सर्वात महत्वाची पार्श्वभूमी होती ती म्हणजे औद्योगिक क्रांतीची. औद्योगिक क्रांतीमुळे खूप गुंतागुंतीचे सामाजिक आणि आर्थिक प्रश्न समाजाच्या पृष्ठभागावर येऊ लागले. मग ते रोजच्या जगण्यामरण्याचे असोत, वा सौंदर्यशास्त्राबद्दल च्या संदर्भातले असोत. या सर्वांना एक सामाजिक राजकीय आयाम येऊ लागला. तो जास्त प्रमाणात पुरुषसत्ताक असला तरीही बऱ्याच अंशी संवेदनशीलतेने मांडला जाऊ लागला. याची सुरुवात पहिल्यांदा साहित्यातून झाली मग नंतरचे कलाविष्कार पुढे येत गेले. यामधील इम्प्रेसनिझम नंतर येणारी रियलीजम यातून समाजाशी निगडित मूलगामी प्रश्न मांडले. या सगळ्याचे पडसाद हे हळूहळू वास्तू कलेमध्येही दिसू लागले. म्हणजे आधुनिकता ही वास्तुकले मध्ये एक शैली म्हणून प्रस्थापित झाली, त्यामागे विचार नव्हता असे



मंदिर स्थापत्यातील द्वि व त्रिमितीय कलाविष्कारांचा अनुभव

१. स्नेहा धर्मावत

एस एम ई एफ्स ब्रिक स्कूल
ऑफ आर्किटेक्चर, पुणे

२. श्री. सुधीर देशपांडे

एस एम ई एफ्स ब्रिक स्कूल
ऑफ आर्किटेक्चर, पुणे

गोषवारा :

युगयुगांतरी माणसाची जिज्ञासा हीच सार्या कला व सौंदर्यनिर्मितीचे करण आहे. रिक्त जागेमध्ये आपल्या कलाकृतीने प्राण ओतण्याचे सामर्थ्य माणसांत आहे. द्विमितीय कलेचे त्रिमितीय स्वरूप म्हणजेच वास्तुकला. क्षितिजाला समांतर असलेल्या कलाप्रकारांना उंची दिल्यास त्याचे रूपांतर त्रिमितीय वापरण्या योग्य जागेत होते. आपल्या भारतामध्ये मंदिर स्थापत्यशास्त्र अशा प्रकारच्या द्वि आणि त्रिमितीय कलाविष्कारांवर आधारलेले आहे. ह्या प्रक्रियेतून निर्माण होणार्या स्थापत्य शास्त्रात माणसाच्या पंचेंद्रियेना सक्रीय करण्यासाठी केले गेलेले भौमितिक रेखांकन व प्रमाण आणि त्यांचा परस्परांशी असलेला संबंध भावपूर्ण आहे. मंदिराच्या मांडणी आणि रचनेवर मानवी वर्तनाचाही प्रभाव पडतो. मंदिरातील सभामंडप हे सामाजिक परस्परसंवाद आणि सहयोगाला प्रोत्साहन देतात, तर गाभाऱ्यातील रचनेची मांडणी गोपनीयता आणि एकाग्रतेला प्रोत्साहन देते. ह्या संशोधनाचा उद्देश द्वि व त्रिमितीय कलाविष्कारांमुळे अनुभवता येणार्या प्रभावांचा मानवी अंगाशी अभ्यास करणे आहे. ह्या कलाविष्कारांमध्ये शिल्पे, चित्रे, नक्षीकाम, प्रकाश कवडसे, जाळ्या तसेच इतर कलाप्रकारांचा अभ्यास केला आहे. ह्या संशोधनासाठी प्रयोगात्मक उदाहरण म्हणून पुणे येथील काही मंदिरांचा अंतर्बाह्य संवाद, सौंदर्य, भावप्रसुती आणि आध्यात्मिक एकाग्रता ह्या घटकांतर्गत अभ्यास केला आहे. तसेच ह्या संशोधनासाठी पूरक असे छाया चित्रणही केलेले आहे. ह्या मंदिरात आलेल्या काही लोकांच्या मुलाखती वरील नमूद केलेल्या घटकांतर्गत घेतलेल्या आहेत. संशोधनाच्या अंती असे आढळून आले की, कलाविष्कारात मंदिराच्या सौंदर्यात भर घालत नाही तर एक सुसंवादी अनुभव विदीत करतात.

महत्वाचे शब्द : द्विमितीय, त्रिमितीय, अनुभव, मंदिर, स्थापत्यशास्त्र.

१. परिचय

भारतीय पारंपारीक स्थापत्य प्रणाली, वास्तुशास्त्रानुसार, मंदीरे नेहमीच ब्रह्मांड किंवा विश्वाचे सूक्ष्म आणि प्रतिकात्मक प्रतिनिधीत्व म्हणून पाहिली जातात. भारतीय उपखंडातील मंदीरे आणि त्यांच्या स्थापत्यशास्त्राचे अद्भुत संस्कृती, आध्यात्मिक आणि ऐतिहासिक महत्त्व आहे. मंदीराचे महत्त्व पूजास्थळांच्या पलीकडे आहे; ते लोकांसाठी जीवनाच्या विविध पैलूंमध्ये योगदान देणाऱ्या संस्था म्हणून काम करतात. मंदीरे वास्तुकला वैविध्यपूर्ण आहे, जे या प्रदेशातील समृद्ध संस्कृती प्रतिबिंबित करते. द्रविड, नागर आणि वेसारा यांसारख्या विविध शैली, गुंतागुंतीच्या कोरीव काम, उंच शिखरे आणि तपशीलवार शिल्पे दर्शवतात जी केवळ सौंदर्याचा उद्देशच नाहीत तर भव्यतेचा अनुभव देतात. भारतीय मंदिरांमधील भौमितिक रचना ही द्विमितीय आणि त्रिमितीय जागेला मूर्त स्वरूप देते आणि त्यामधील गणितीय अचूकता ही कलात्मक पूर्णतेचे दर्शन घडवते. मंदिराच्या स्थापत्यशास्त्रात प्रचलित असलेल्या मंडलाचे आकृतिबंध, वैश्विक शक्तींच्या सुसंवादी मिलनाचे प्रतीक असलेल्या वर्तुळाकार आणि चौकोनी घटकांना अखंडपणे एकत्रित करतात. आकृती १ व २ मध्ये दाखवल्याप्रमाणे मंदिराच्या दर्शनी भागावर अनेकदा जटिल भौमितिक कोरीवकाम केलेले असते, ज्यामुळे सपाट पृष्ठभागांचे रूपांतर मंत्रमुग्ध करणाऱ्या त्रिमितीय आकारात होते. (छायाचित्र क्रमांक १, २)

भारतीय मंदिर स्थापत्यकलेच्या विविध परंपरांमध्ये, वैयक्तिक मंदिर रचनांच्या औपचारिक रचनेत, उदय आणि वाढीचा एक गतिमान क्रम व्यक्त करणाऱ्या आणि अशा परंपरेच्या संपूर्ण काळात मंदिराचे स्वरूप ज्या प्रकारे विकसित होते, अशा दोन्ही प्रकारांमध्ये एक भावनात्मक योजना दिसून येते. आर्किटेक्चर (वास्तुशास्त्र) वरील कॅनॉनिकल संस्कृत ग्रंथ (वास्तुशास्त्रे) ही विचारसरणी सामायिक करतात, विविध प्रकारचे मंदिर प्रकार सादर करतात ज्यामध्ये डिझाईन्स साध्या ते जटिलतेपर्यंत विकसित होतात, अनुक्रमे एकमेकांपासून उदयास येतात. हे

Education and Society
(शिक्षण आणि समाज)

Special Issue
UGC CARE Listed Journal
ISSN 2278-6864

Education and Society

Since 1977

The Quarterly dedicated to Education through Social Development and
Social Development through Education

April 2023

(Special Issue-1/ Volume-II)



INDIAN INSTITUTE OF EDUCATION

128/2, J. P. Naik Path, Kothrud, Pune - 411 038

Education and Society
(Since 1977)

Special Issue
UGC CARE Listed Journal
ISSN 2278-6864

Education and Society

Since 1977

**The Quarterly dedicated to Education through Social Development
And Social Development through Education**

Special Issue on the theme of
**"Sustainable Development Goals in SAARC Country: Key Issues,
Opportunities and Challenges"**

April 2023

(Special Issue-I/ Volume-II)



Indian Institute of Education
J. P. Naik Path, Kothrud, Pune- 38

A Study of Water Management for Built Environment in Rural Part of Western Maharashtra

Shraddha Mahesh Manjeshkar

Research Scholar,

Amity University, Haryana, India,

Pallavi Sharma

Professor,

Amity University, Haryana, India,

Pooja Reskar

Principal,

S.M.E.F.'s Birla School of Architecture, Pune, India,

Jyoti Jain Thodiya

Associate Professor,

MMCOA, Pune

Abstract:

The water resource planning of the transitional villages is always the focus area of planners. The purpose of planning is to optimize the use of resources sustainably. Sustainable Development Goal (SDG) 3 Good health and well-being, SDG 6 Clean Water and Sanitation, SDG 9 Industry, innovation and infrastructure, SDG 11 Sustainable Cities and communities, SDG 13 Climate action all have a direct connection with water resource management in the built environment. Several departments of the government of India and policies are active on this front. This paper focuses on SDG 6, to relate the existing policy framework and the present state of water management systems in the rural areas of Western Maharashtra. Various aspects of the built environment that help in sustainable water management are considered to establish this relation. The representative cases of the villages are taken from the state of Maharashtra. The visual surveys are conducted in five representative village typologies. The research observes the present status of water management practices and identifies the gaps where the policy framework can be designed/modified for ensuring clean water and sanitation.

Keywords: Water Resource Planning, Rural areas, Growing Urbanization, Public Participation

Introduction:

Water security and sanitation are fundamental global issues (The Global Goals, 2022) and play vital role in sustainable development (Travis Katz, Jennifer Sara, 2004). It is argued that the changes in population and economic growth will affect the supply-demand balance for water (Hurlimann & Wilson, 2018). Environmental quality and human well-being are interrelated. The quality and quantity of water that is readily accessible to populations are influenced by water-related ecosystems (Paul, 2022), and



Vol 10, No 2 (2021)

Table of Contents

Research Paper

The Gap between Architecture Education and Architectural Profession in Iran

Pages 1-12

Saba Hejazi and Minoo Shafaei

[ABSTRACT](#) | [PDF](#) | DOI: <http://dx.doi.org/10.7492/IJAEC.2021.008>

Cast-in-place Freeform Concrete with Big Area Additive Manufacturing Formwork

Pages 1-9

Ming Tang and Noah Shroyer

[ABSTRACT](#) | [PDF](#) | DOI: <http://dx.doi.org/10.7492/IJAEC.2021.009>

Decoding Comprehensive Sustainability in the Design of Affordable Housing in the Urban Context

Pages 1-11

Alka Sunil Kote and Sudhir Ramesh Deshpande

[ABSTRACT](#) | [PDF](#) | DOI: <http://dx.doi.org/10.7492/IJAEC.2021.010>

Governance of Public-Private Partnership Projects through Integrated Incentive and Supervision Functions

Pages 1-10

Xueqing Zhang and Guanqun Shi

[ABSTRACT](#) | [PDF](#) | DOI: <http://dx.doi.org/10.7492/IJAEC.2021.011>

Implementation of Green Technology Principles for Sustainable Infrastructural Development in the Niger Delta Region of Nigeria

Pages 1-13

Monday Otali, Edet Ikurekong and Jacob Atser

[ABSTRACT](#) | [PDF](#) | DOI: <http://dx.doi.org/10.7492/IJAEC.2021.012>

USER

You are logged in as...

srd_sukhrup

- [My Journal](#)
- [Edit My Profile](#)
- [Log Out](#)

JOURNAL INFO

- [Editorial Board](#)
- [Editorial Office](#)
- [Production and Distribution](#)
- [Contact Us](#)

BEST PAPER AWARD

- [Best Paper Award](#)

THEMATIC ISSUES

- [Call for Thematic Issues](#)

READERS

- [Make a Search](#)
- [View Contents](#)
- [Recommend to a Friend/Library](#)

AUTHORS

- [Submit an Article](#)
- [Guide for Authors](#)
- [Ethical Guidelines](#)
- [Copyright Transfer Agreement](#)

EDITORS

- [Guide for Editors](#)
- [Invitation for English](#)



Title: Decoding Comprehensive Sustainability in the Design of Affordable Housing in the Urban Context

Authors: Alka Sunil Kote (Professor in Civil Engineering at Dr D Y Patil Institute of Technology, Pimpri, Pune);
Sudhir Ramesh Deshpande (Associate Professor, SMEF's Brick school of Architecture).

Issue: [Vol 10, No 2 \(2021\)](#)

Pages: 1-11

Section: Research Paper

DOI: <http://dx.doi.org/10.7492/IJAEC.2021.010>

Citation: Alka Sunil Kote and Sudhir Ramesh Deshpande (2021). "Decoding Comprehensive Sustainability in the Design of Affordable Housing in the Urban Context." *International Journal of Architecture, Engineering and Construction*, 10(2), 1-11.

Publisher: [International Association for Sustainable Development and Management \(IASDM\)](#)

Abstract: The developments in social, economic, political, health, and environmental aspects in the urban context have direct implications on the cost of a house. It leads to the requirement of a comfortable space where the physical, psychological, and social needs of the occupant are fulfilled at an affordable cost. Thus, the design of affordable housing needs an integrated sustainable approach. An urban city like Pune in India is an emerging metropolitan city facing similar challenges. This paper attempts to decode the concept of comprehensive sustainability through social, environmental, and techno-functional dimensions based on attributes derived from qualitative literature. Also, this study is supported by an occupant survey carried out in low economy wards of Pune, India. Based on the observations and inferences from the survey, this study proposes decisive measures like the style of planning, culture, communication space planning, density planning, orientation, energy efficiency, space optimization, and construction technology to ensure sustainability and affordability. The findings from the comprehensive sustainability matrix recommend long term affordability in design, construction, operational, and repair costs in housing.

Keywords: Affordability, sustainability, urban planning, occupant, housing design

Full Text: [PDF](#)

USER

You are logged in as...
srd_sukhrup

- [My Journal](#)
- [Edit My Profile](#)
- [Log Out](#)

JOURNAL INFO

- [Editorial Board](#)
- [Editorial Office](#)
- [Production and Distribution](#)
- [Contact Us](#)

BEST PAPER AWARD

- [Best Paper Award](#)

THEMATIC ISSUES

- [Call for Thematic Issues](#)

READERS

- [Make a Search](#)
- [View Contents](#)
- [Recommend to a Friend/Library](#)

AUTHORS

- [Submit an Article](#)
- [Guide for Authors](#)
- [Ethical Guidelines](#)
- [Copyright Transfer Agreement](#)

EDITORS

- [Guide for Editors](#)
- [Invitation for English Language Editors](#)

UGC-CARE List

You searched for "International Journal of Architecture, Engineering and Construction ", Total Journals : 1

Search:

Sr.No.	Journal Title	Publisher	ISSN	E-ISSN	Action
1	International Journal of Architecture, Engineering and Construction	International Association for Sustainable Development and Management	1911-110X	1911-1118	View

Showing 1 to 1 of 1 entries

Previous 1 Next



international jour x

IAEC - Internati x

Consortium for A x

SearchList x

ViewDetails x

Welcome to UGC x

Consortium for A x

Web of Science x

+

-


x

ugccare.unipune.ac.in/Apps1/User/WebA/ViewDetails?JournalId=101000050&flag=Search

☆ S

Apps YouTube Maps Gmail

Reading list

**SAVITRIBAI PHULE
PUNE UNIVERSITY**

Home

UGC

Search

UGC-CARE List


Journal Details

Journal Title (in English Language)	International Journal of Architecture, Engineering and Construction
Publication Language	English
Publisher	International Association for Sustainable Development and Management
ISSN	1911-110X
E-ISSN	1911-1118
Discipline	Science
Subject	Engineering (all)
Focus Subject	General Engineering

Copyright © 2021 Savitribai Phule Pune University. All rights reserved. | Disclaimer

Windows Taskbar

Type here to search



27°C AQI 132

11:48 AM 7/12/2021



Decoding Comprehensive Sustainability in the Design of Affordable Housing in the Urban Context

Alka Kote¹ and Sudhir Deshpande^{2*}

¹Dr. D.Y. Patil Institute of Technology, Pimpri, Pune, India

²SMEF's Brick School of Architecture, Pune, India

Abstract: The developments in social, economic, political, health, and environmental aspects in the urban context have direct implications on the cost of a house. It leads to the requirement of a comfortable space where the physical, psychological, and social needs of the occupant are fulfilled at an affordable cost. Thus, the design of affordable housing needs an integrated sustainable approach. An urban city like Pune in India is an emerging metropolitan city facing similar challenges. This paper attempts to decode the concept of comprehensive sustainability through social, environmental, and techno-functional dimensions based on attributes derived from qualitative literature. Also, this study is supported by an occupant survey carried out in low-income wards of Pune, India. Based on the observations and inferences from the survey, this study proposes decisive measures like the style of planning, culture, communication space planning, density planning, orientation, energy efficiency, space optimization, and construction technology to ensure sustainability and affordability. The findings from the comprehensive sustainability matrix recommend long-term affordability in design, construction, operational, and repair costs in housing.

Keywords: Affordability, sustainability, urban planning, occupant, housing design

DOI: <http://dx.doi.org/10.7492/IJAEC.2021.010>

1 INTRODUCTION

House is a place that needs to be experienced personally and should be well connected with its surroundings. The developments in social, economic, political, health, and environmental aspects have direct implications on the cost of a house. It leads to the requirement of affordable housing. The design of affordable housing needs an integrated sustainable approach. There is a need to think of affordability in housing with sustainable measures beyond floor area adjustments and compressed space design. Sustainability is not only limited to green initiatives but also interrelated with allied aspects such as socio-economic, environmental, functional, etc. Comprehensive sustainability means sustaining the occupant socially, economically, and environmentally (Iben and Adawo 2015). The conventional policies like compressed areas and vertical settlements create possibilities for new under-served developments. Therefore, efficient planning measures, innovative construction technology, and energy efficiency feature considerably reduce the operational and living costs without compromising qualitative aspects. The quality of the construction, neighborhood, and environment determines affordability (Mishra 2010). Various techno-functional, social, behavioral factors affect the quality of housing

(Soen 1979). The quality of housing requires an analysis of various parameters of the context. The parameters are individual and family needs, dwelling unit or space requirement, neighborhood, location, tenure, building regulations, structural norms, cultural bonding, and the occupants' psychology. There is a need to create awareness about people's lifestyles while designing affordable houses (Sidawi 2008). Therefore, context plays a vital role in qualitative, affordable housing.

The cities in India are also urbanizing at a rapid rate. Urban cities like Mumbai and Pune are the fastest growing cities in Asia. The case city Pune is a western IT capital hub and is getting recognized as a Mumbai twin city. The migration of people from surrounding towns to metropolitan cities is remarkable due to employment and business opportunities. Thus, there is a dearth of houses in Pune urban areas at an affordable cost.

As per the Development Control and Promotion Regulations (DCPR) of Pune Municipal Corporation (PMC), developers are required to construct 20% affordable housing of the built-up area for the approval of layout projects (PMC 2017). The PMC and several corporations offer security areas to plan affordable housing under a Govt. of India Initiative Pradhanmantri Awas Yojana 2022.

*Corresponding author. E-mail: sudhirdeshpande@gmail.com



area adjustments and compressed space design. It further recommends the use of region-sensitive facades, use of renewable energy, and faster construction technology to fulfill the physical, psychological, and social needs of the occupant at an affordable cost.

REFERENCES

- Agarwal, R., Chaudhary M., and Singh, J. (2015). Waste management initiatives in India for human well being. *European Scientific Journal*, 11(10), 1857-7881.
- Aziz, A., and Ahmad, S. (2012). House making in low-cost housing area. *Procedia - Social and Behavioral Sciences*, 49, 268-281. <https://doi.org/10.1016/j.sbspro.2012.07.025>
- BMTPC (2018). Compendium of prospective emerging technologies for mass housing. Building Materials and Technology Promotion Council, Ministry of Housing and Urban Affairs Government of India, India.
- Bordignon, B. (1998). Systems design approach for sustainable affordable housing. MSc. thesis, University of Toronto, Toronto, Canada.
- Chaurasiya, P., Warudkar, V., and Ahmed, S. (2019). Wind energy development and policy in India: A review. *Energy Strategy Reviews*, 24, 342-357. <https://doi.org/10.1016/j.esr.2019.04.010>
- Ettelaoui, S., Reza, A., Azeri, K., and Kari, G. (2014). The role of culture in promoting architectural identity. *European Online Journal of Natural and social sciences*, 3(4), 410-418.
- Friedman, A. (2005). *Homes Within Reach: A Guide to the Planning, Design, and Construction of Affordable Homes and Communities*. Wiley, New Jersey, USA.
- Golubchikov, O. (2016). Green homes: Towards energy-efficient housing in the United Nations economic commission for Europe region, United Nations, USA.
- Hayles, C. (2006). An examination of the relationship between sustainability and affordability in residential housing markets. *The 12th Pacific Rim Real Estate Conference*, Auckland, New Zealand.
- Hillier, B. (2007). *Space is the Machine: A Configurational Theory of Architecture*. Space syntax, London, UK.
- Hillier, B., and Hanson, J. (1984). *The Social Logic of Space*. Cambridge University Press, The United Kingdom. <https://doi.org/10.1017/CBO9780511597237>
- HUDCO (2014). Annual report of Housing and Urban Development Corporation. New Delhi, India.
- Ismail, F., and Abuwa, E. (2015). A framework for understanding sustainable housing for policy development and practical actions. Architects Colloquium, Architects Registration Council, Nigeria.
- Ismail, F., Jabar, I., Janipha, N., and Razali, R. (2015). Measuring the quality of life in a low-cost residential environment. *Procedia - Social and Behavioral Sciences*, 168, 270-279. <https://doi.org/10.1016/j.sbspro.2014.10.232>
- Karuppannan, S., and Sivani, A. (2011). Social sustainability and neighborhood design: An investigation of residents' satisfaction in Delhi. *Local Environment*, 16(9), 849-870. <https://doi.org/10.1080/13549839.2011.607159>
- Kenney, S. (1994). Cultural influences on architecture. Thesis, Texas Tech University, Lubbock, Texas, USA.
- Mushal (2010). Housing Study for Pune Municipal Corporation, Pune, India.
- MNGL (2018). Annual report of Maharashtra Natural Gas Ltd., Pune, India.
- NBC (2016). National Building code. Bureau of Indian standards, 2(11), India.
- PMC (2017). Development control and promotion regulations for Pune Municipal Corporation. Pune, 31(1), 231.
- Salama, A.M. (2005). A lifestyle theories approach for affordable housing research in Saudi Arabia. *Emirates Journal for Engineering Research*, 11(1), 67-76.
- Sharma, A. (2018). Influence of "culture" on affordable housing typologies. *The 3rd Affordable Housing Forum: Towards New Cultures of Affordable Housing*, Belval, Luxembourg.
- Sidawi, B. (2008). Incorporating lifestyle in the design of affordable housing in Saudi Arabia Kingdom. *Emirates Journal for Engineering Research*, 13(2), 67-72.
- Singh V., and Pandey D. (2012). *Sustainable Housing: Balancing Environment with Urban Growth in India*. Climate Change and CDM Cell, Jaipur, India.
- Steelman, P. (2006). Why are most buildings rectangular? *Architectural Research Quarterly*, 10(2), 119-130. <https://doi.org/10.1017/S1353135306000200>
- Soen, D. (1979). Habitability - Occupants' needs and dwelling satisfaction. *Ergonomics*, 46(275), 129-134. <http://www.jstor.org/stable/4362815>
- Trancik, R. (1986). *Finding Lost Space: Theories of Urban Design*. John Wiley and Sons, USA.
- Wood, J. (2017). Creating better American cities: A study of circulation and common spaces of public housing. B.Arch. thesis, University of Arkansas, Fayetteville, USA.

JOURNAL OF THE INDIAN INSTITUTE OF ARCHITECTS



REFEREED JOURNAL OF IIA | ISSN-0019-4913

2019 JANUARY | VOLUME 84 | ISSUE 01 | ₹ 100

UIA-IIA ARCHITECTS MAHAKUMBH LUCKNOW



happiness through architecture

Signature

Signature

Contents

IIA IS REFERRED JOURNAL
ISSN-0013-0313

REGISTERED UNDER SOCIETIES REGISTRATION ACT, XXI OF 1860
JOURNAL OF THE INDIAN INSTITUTE OF ARCHITECTS
VOL. 84 ISSUE: 01 - JANUARY 2019

- 4 Editorial - Ar Anand Palaye
- 5 President's Message - Ar Divya Kush
- 6 Logo Competition Launch - UNESCO-UIA World Capital of Architecture
- 8 UIA International Forum on Tourism in Historic Cities at BAKU
- 9 UIA-IIA Architects Mahakumbh Lucknow
- 16 Proposed Curriculum for Architectural Design
- Ar. M. Pratap Rao
- 20 Defects and Maintenance in Residential Apartment Buildings
- Dr. Anurag Kashyap & Ar. Rahul Chutake
- 25 IIA Subscription Form
- 26 Impact of Transition in Culture & Change in Behavioral Expression
- Ar. Vijay B. Sambekar & Dr. Suresh V. Ranade
- 31 Socio-Ecological Urban Systems: Planning for Resilience
- Ar. Alokanda Banerjee Mukherje & Ar. Suchandra Bardhan
- 37 IIA Student Membership Form
- 38 Bringing flexibility in design of affordable house prototypes
- Prof Dr Alka Sunil Kote & Ar. Sudhir Ramesh Deshpande
- 43 29th JK AYA Entry Form
- 44 Re-Imagining the Development of Inner city: A case of Aurangabad
- Ar. Karansingh A Thakur
- 52 A Paradigm of Modern Living
- Ar. Jagdish B. Karamchandani



ALL RIGHTS RESERVED 2018. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, photocopying, recording or any information storage or retrieval system without permission in writing from THE INDIAN INSTITUTE OF ARCHITECTS.

Only materials accompanied by stamped and self-addressed envelopes can be returned. No responsibility is taken for damage or safe return by the Editor of IIA. The Editor of the THE INDIAN INSTITUTE OF ARCHITECTS takes no responsibility for author's opinion expressed in the signed articles.

Printed & Published by Ar Anand Palaye on behalf of The Indian Institute of Architects and printed by Arhant Digiprint, Unit Nos. 1-2, Bussia Industrial Estate, Hanuman Lane, Near to Peninsula Corporate Park, Lower Parel, Mumbai - 400 033 and Published at The Indian Institute of Architects, Prospect Chambers Annex, 15th Floor, Dr D N Road, Fort, Mumbai - 400 001.

Tel: +91 22 22046973/22046974/22046975 Fax: +91 22 22046976
Email: iiapublication@gmail.com / iiahot254@gmail.com
Website: www.indianinstituteofarchitects.com
Editor: Ar Divya Kush R.N.I. No.9459/57
Email: divyakush@yahoo.co.in
Printer's Email: arhantdigiprint.offices@gmail.com

IIA OFFICE BEARERS 2018-2019

Ar Divya Kush	- President
Ar Prakash Deshmukh	- Inm Past President
Ar Vikas V Avachut	- Vice President
Ar Anaghi Kumar Gupta	- Jr Vice President
Ar Sunil P Degwekar	- Hon Treasurer
Ar C. R. Raju	- Jt Hon Secretary
Ar Lalchan Zafarwal	- Jt Hon Secretary
Ar Anand Palaye	- Chairman - Publication Board & Executive Editor, IIA

Cover Photo: UIA-IIA ARCHITECTS MAHAKUMBH LUCKNOW

Ar Anand Palaye

Ar Divya Kush

Bringing flexibility in design of affordable house prototypes for Pune city

Prof Dr Alka Sunil Kote



Dr Alka Sunil Kote is a Professor in Civil Engineering at Dr D.Y. Patil Institute of Technology, Pimpri, Pune. She has 27 years experience in teaching and 1 year industrial experience. She completed PhD from Indian Institute of Technology Bombay, Masters in Water Resources Engineering from Walchand College of Engineering, Sangli, Maharashtra and Bachelors in Civil Engineering from Goa College of Engineering, Farmagudi, Goa. She is associated with six professional bodies viz. Indian Society for Technical Education (ISTE), New Delhi, Institution of Engineers (IE) (India), Kolkata; Indian Society for Hydraulics (ISH), Pune, Indian Water Resources Society (IWRS), Roorkee, Indian Water Works Association (IWWA), Mumbai and Indian Society of Geomatics (ISG), Ahmedabad. She has 55 Publications in National & International Journals & Conferences. She has guided 25 undergraduate, 13 postgraduate students and is currently pursuing PhD under her guidance in Research Centres at IIT, Pimpri and BNCA College of Architecture affiliated to Savitribai Phule Pune University (SPPU). She is a reviewer of Journal of Hydrologic Engineering, The American Society of Civil Engineers, United States of America. She is awarded Department of Irrigation Prize, Ministry of Water Resource, Government of India in 25th Indian Engineering Congress at Cochin in 2010. She was a member, Board of Studies in Civil Engineering, SPPU. She received Rs 14 lakhs grants under Research Projects, AICTE-MODROBS schemes and for attending International Conference at Malaysia. She is involved in teaching & consultancy work in Civil Engineering. She is a review expert for Maharashtra Public Service Commission Examination. She has been a resource person in various short term training programs at Indian Institute of Technology Bombay, Government College of Engineering, Aurangabad, and D.Y. Patil College of Engineering, Akurdi, Pune.

alkakote26@gmail.com

Ar. Sudhir Ramesh Deshpande



Ar. Sudhir R. Deshpande, is an architect and academician. He has more than 10 years of professional experience & 7 years of teaching experience. Previously he has worked in reputed firms like Vascon Engineers, Dar Al-Hadith Group with capacity of senior architect. Presently he is associated as a senior architect with K&G architects, Pune. He did Masters in Construction Management & Bachelor of Architecture from D.Y. Patil college of Architecture, University of Pune. He is presently working as an associate professor at SMEF's Birla School of Architecture, Pune. He was previously associated with Sinhgad college of Architecture, Pune & Vidya Pratishthan's School of Architecture, Baramati. He is PhD scholar, at Dr. Bharubhai Nanavati College of Architecture – BNCA, PhD-Center affiliated to Savitribai Phule Pune University, SPPU.

srd.sukhrup@gmail.com

ABSTRACT

The capability to adapt, to change or accommodate change is a basic and fundamental requisite for the future of city. The traditional design practice for housing is challenging in an uncertain changing context. Currently, Pune is growing city and demanding flexible affordable housing. It is due to rapid rise in population and migration of people from varied and distinct cultural backgrounds. In this paper the concept of flexibility is discussed and examined from the theoretical as well as practical point of view. This study also identifies the addressees of flexible design viz. architectural layout, structural systems, service spaces and flexible interior furnishing. This research suggests strategies like addition-deletion, neutralization and joining-segregation that ensure both the adaptability of the space in response to changing usage and affordability.

Key Words: Flexibility, affordability, space, neutralization, usage

1. Introduction

The capability to adapt, to change or accommodate change is a basic and fundamental requisite for the future of city. The traditional design practice for housing is challenging in an uncertain changing context. A process of area optimization is critical in a rigid design. Therefore, flexibility

concept is introduced all over the world. It is very important to introduce innovative concepts in design to create flexible physical environment (Blackman, 2003). Flexibility is the ability of a system to convert or modify built or open elements as per need of the user (Celluci, 2015). It provides an effective alternative to psychological perceptions of the user. (Kiauhis, 2000). The study of sociological pattern helps

to assess need-based users in a community viz. i) Young families who benefit from the re-configuring of rooms to meet their changing spatial requirements over time. They can afford their first home as a flexible home. ii) Single adults who may want to use some spaces communally and other spaces independently. iii) The people who need some space for their commercial activity in the housing society itself by additional or convertible shops, office in their proposed prototype only. iv) Persons with disabilities may require flexible housing designed to be fully wheelchair-accessible, including wide corridors and special features for visually impaired and physically disabled (Graham, 2016).

The concept of flexibility is dependent upon some aspects of design viz. architectural layout, structural systems, services and furnishings as shown in Fig. 1. Architectural layout enables the quality of multifunctional use of a space. Flexible structural design system enables the architects to separate the interior from structure (Estaji, 2017). Construction technology & services are inseparable part in affordable flexible housing. The observed perception of the user about services is based on convenience and maintenance. Flexible service locations enable effective space planning inside the unit. The furnishing in interior will provide extra carved storage spaces in the unit without increasing the area. The interior should be flexible enough to adjust with changes as per convenience of the user (Inani, 2014).

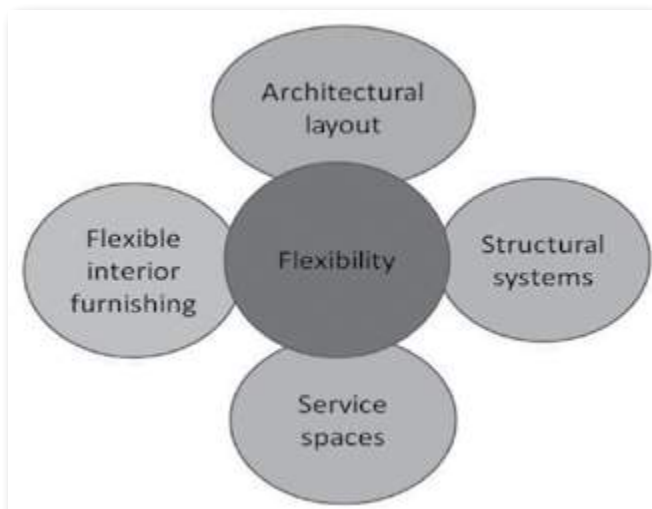


Fig. 1 Addressees of flexible design (Source: Author)

Flexibility should be practiced effectively in developing metro cities. Pune is one of the fastest urbanizing cities in India due to rapid rise in population and migration of people from varied and distinct cultural backgrounds. The challenge facing Pune Municipal Corporation is to supply homes at affordable cost in response to the increasing demand. This population includes job seekers, college students, small scale businessmen, etc.

It also includes the population from Wada's, Gaothan, dilapidated buildings or extremely cramped regular housing. It is due to lacking of alternatives which offer better space for housing (Mashal Project Team, 2010). Therefore, the flexibility concept can be implemented in different ways for Pune city. It is categorized under some attributes/parameters. Effective design of a space is one of the primary addressee in providing flexibility (Schneider, 2007). Application of complementary construction technology is also important for flexible designs. (Estaji 2017, Arroyo 2017, Yadav 2013). Effective Space and Technology should provide the flexible and adaptable physical design to the user (Inani, 2014, Narendran 2014).

2. Methodology

Literature from various contributing fields is considered comprehensively to define flexibility and flexible design. The selected literature is reviewed to identify the attributes of flexibility in an affordable housing. The studies selected are limited to those pertaining to the meaning of flexibility and needs & expectations of the user from a home. The probable users are defined in the study. The application of flexibility concept is explained in the context of space, construction technology & design. The design strategies are discussed to make the unit as flexible. The purpose of this analysis is to standardize and create a thought process for application of flexible design in an affordable housing.

3. Preliminary data, findings and discussions

In order to provide a new and flexible approach in design & construction for affordable housing in Pune city, a suitable prototype design is proposed. In the following section the strategies for affordable prototype design is studied under three primary domains namely (i) flexibility in space (ii) flexibility in construction technology (iii) flexibility in design.

3.1 Flexibility in Space:

Flexibility in space offers more functions to the prototype design (Danko, 2013). It also plays a part in three-dimensional volume of space. It gives flexibility to accommodate more



Fig.2 Multi Functional common space



Fig.3 Separation of areas with Furniture arrangement

(Source: Kalba Devi Chawl, Goregaon Chawl, Mumbai Chawls and People newsletter, Mumbai)

space in a vertical way and to have comfortable height inside the tenement. Many designs in apartment buildings possess a large non-utilization factor in the tenement. This factor could be reduced by means of flexible space planning.

There is a correlation between space and flexibility. The space should not be rigid in occupying secondary functions into it. The history and lifestyle of people in Pune was very much different in earlier period. Many functional activities like communication, sitting, playing, and allied activities of cooking took place in the social spaces. It improved space optimization in tenements. It can be easily observed from Fig.2 that the social space could be designed as multifunctional. The Fig.3 shows the use of furniture for the separation of areas. It saves space by accommodating furniture as storage and partition.

3.2 Flexibility in Construction Techniques:

There is also a relationship between construction techniques and flexibility. Flexibility requires reduction in rigidity by providing complementary construction technology. Certain logic of construction and provision of services allows flexibility of configuration, which in turn enables flexible use and occupation (Graham, 2016). The material and construction methodology should be flexible in terms of providing different building typologies such as high rise, midrise, low rise, single modular homes and quadruplex. The standardization of structural components is very much important in flexible construction. The components should possess less self-weight, minimum self-occupied space, favorable for different surface treatments as per choice and customized in terms of containing service rails on or inside the surface. This is possible with precast and prefabrication technology. Prefabricated housing is now growing all over the world and style of composite construction is suitable for flexible mass scale housing. The composite construction could include the precast concrete, structural steel, aluminum form-works in a very comprehensive way (Yadav,



Fig. 5: Surface Paneling system

(Source: Svetlana Brzev, British Columbia Institute of Technology, Canada, 2015)

2013). Fig. 4 shows precast paneling construction (in place of masonry) in the apartment scheme at Bangalore.

A complete precast paneling system in Canada is shown in Fig.5. It offers quick construction and hence saving in cost. Also, quality of construction gets enhanced due to casting in controlled environment.

3.3 Flexibility in Design

The flexible design plays an important role in providing flexible interiors inside the prototype. The design & placement of external staircases, internal staircases, lifts, entrances, service lobbies enables effective planning and space optimization inside the house. The Fig. 6(i) shows the design of low-level windows with extended sills that could be utilized as sitting in drawing room. It also could be a place for relaxation as shown in Fig. 6(ii). It could be worked out as a traditional way of planning like 'katta' seating which was found in traditional houses and in public places.

Some strategies in flexible design that could be implemented are namely i) Provision of undefined neutral space inside the house for multifunctional utilization. The design can adapt the functions without any physically change (Celluci, 2015).

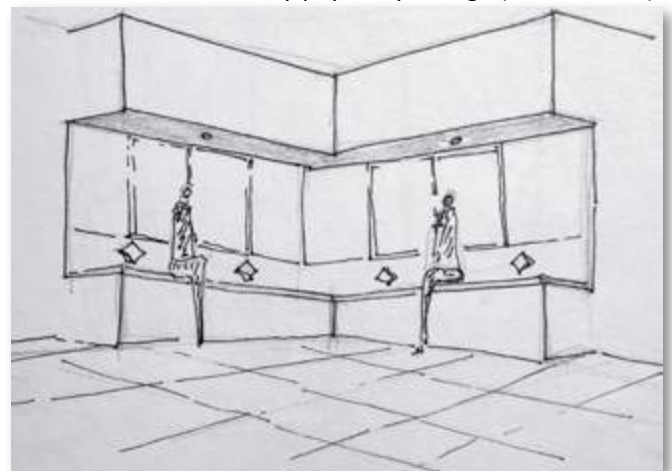


Fig 6 (i) and (ii) : Low level window design for formal and informal seating
(Source: Author)

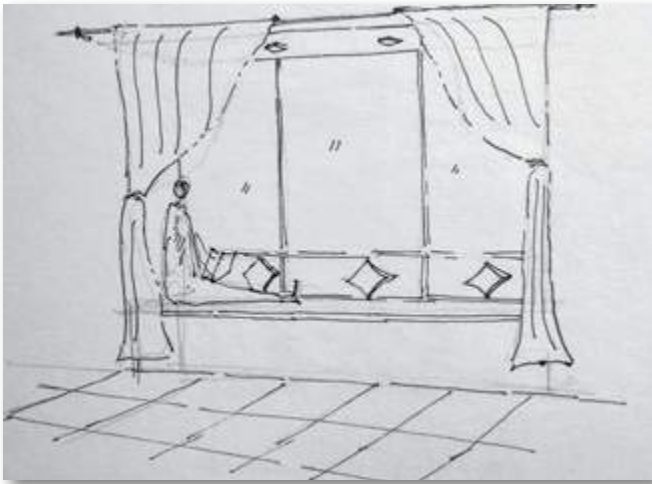


Fig 6 (i) and (ii) : Low level window design for formal and informal seating (Source: Author)

This is possible either by neutral sizing of the living units to accommodate any function and elimination of hierarchy between them (e.g bedroom can be converted into a study, etc.). It is shown in Fig. 7 (i) and (ii) that the wall between living room and bedroom could be adjusted during day and evening time. It could be a good interactive space and dining space for family users.

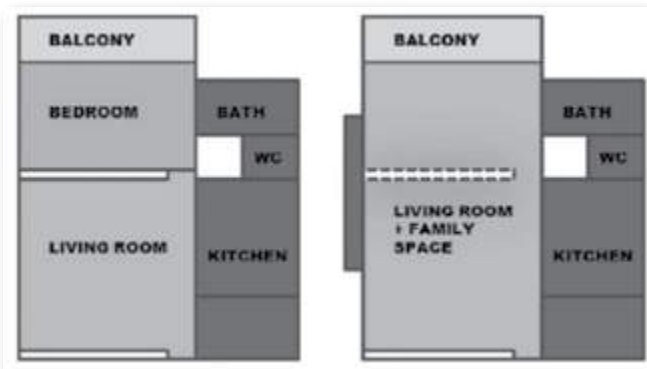


Fig. 7 (i) and (ii): Planning of Undefined Neutral Space (Source: Author)

ii) Use of balcony during the day time as a common family habitable space. iii) Provision of part mezzanine floor that can accommodate 1-2 people at night for sleeping or can provide storage space iv) Provision of lofts for storage. v) Smooth conversion of a building by providing regular grid for laying flexible structural system. vi) Use of materials that ensure maximum reversibility of the system in addition to the flexibility of the internal space viii) Assembling and disassembling of the structural component and the use of hollow or rectangular beams capable of integrating the installation system inside the structural form. The internal space should be designed as a completely flexible and should be complementing to its convertibility.

As seen in Fig. 8, the ability of space should be flexible towards addition or removal. This potential should be explored in the

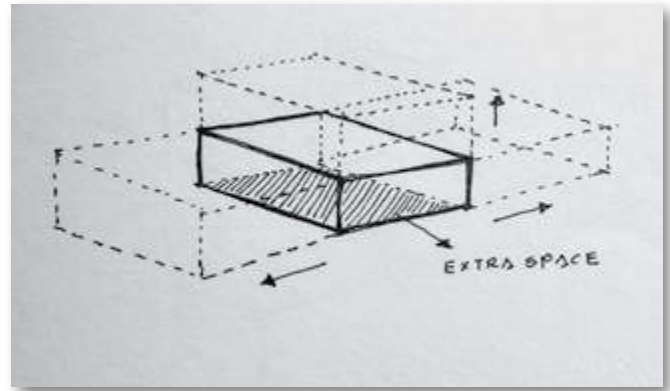


Fig.8 Addition or Deletion strategy (Source: Author)

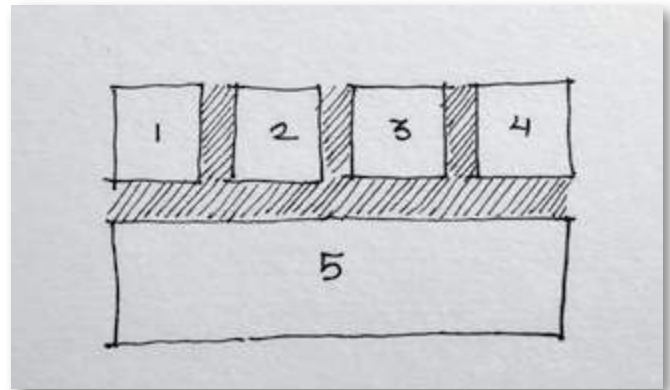


Fig.9 Neutralization of area (Source: Author)

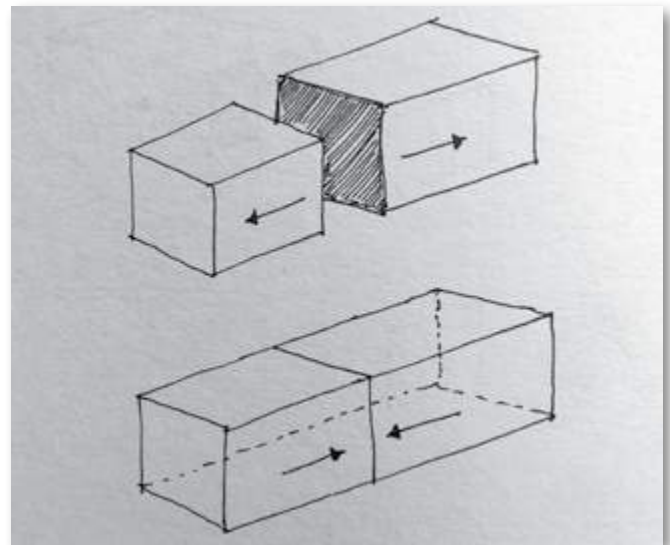


Fig 10 Joining or Segregation mechanism (Source: Author)

design phase itself rather than post-construction phase to allow for simple alterations to structural and service systems. This provides quality in flexibility as per the need of the end user.

The flexible design also should possess neutralization of area except service areas as shown in Fig. 9. It explains that there will be no clear intended use for any room. The end user can decide the internal planning as per the needs and

functional activities. It is a new idea and could be effective considering current trend and aspirations of the user. The elements like sliding doors and screens can greatly increase the spatial configurations of a house and allow spaces to be used for numerous different uses. The vertical walls could be adjustable in nature to have space dimension as per functional requirement.

The concept of joining and dividing space generally becomes critical for multifamily apartments. As shown in Fig. 10, joining and segregation mechanism allows increase or decrease in a volumetric space. It also enables 'change in ownership' in case of an adjacent tenement in an apartment building. This method need not be limited to horizontal plane and projects that are flexible in three dimensions typically offer the most options for adaptability.

4. Conclusion

The study shows that there is a need of 'change in perspective' towards the affordable prototype design in Pune city. This paper further identifies the addressees of flexible design viz. architectural layout, structural systems, service spaces and flexible interior furnishing. The proposed research has suggested flexibility strategies like addition-deletion, neutralization and joining-segregation which ensure the adaptability of the space in response to changing usage and affordability. These flexibility strategies can be applied effectively only with the combined efforts of Architect, Engineer and Developer.

BIBLIOGRAPHY

- (1) Arroyo S. 2007, Emerging Technologies and Housing Prototypes - Berlags Institute
- (2) Blackman, 2003, 'Building Futures: Housing', Building Futures: A Building Design Supplement for CBE and RIBA
- (3) Celluci C. 2015, The Flexible Housing: Criteria and Strategies for Implementation of the flexibility, Journal of Civil Engineering and Architecture, 9, 845-852
- (4) Danko M. 2013, Designing Affordable Housing for Adaptability: Principles, Practices and Applications, Pitzer Senior theses, Pitzer college
- (5) Estaji, 2017, 'A review of flexibility & adaptability in housing design', International Journal of Contemporary Architecture "The New Arch", Vol.4, No.2, 2017
- (6) Graham, P. 2016, Design for adaptability - an introduction to the principles and basic strategies, The Royal Australian Institute of Architects, GEN66.
- (7) Inani S., 2014, Flexibility concept in design and construction for domestic transformation
- (8) Klaus, 2000, Journal of Housing and the Built Environment, Vol. 15, No. 4 (2000)
- (9) Mashal Project Team, 2010, 'Housing Study for Pune Municipal Corporation'
- (10) Narendran A, Filbert Musau, 2014, Flexible and Environment Responsive mass housing in Bangalore, India, 30th International Plea Conference, CEPT University, Ahmedabad
- (11) Schneider 2007, Flexible housing. Taylor and Francis Publication.
- (12) Suryavanshi R., 2016, Housing for all by 2022: Shelter - Volume 17, Hudco Publication
- (13) Yadav N., 2013, Pre-Cast Technology: An Initial Step to Sustainable Development, International Journal for Scientific Research and Development, Vol. 1, Issue 7, 2013



Fig. 4: Mid rise precast panelled scheme at Bangalore (Source: NRM Media Publication, 2011)