HUDCO AWARDS FOR BEST PRACTICES TO IMPROVE THE LIVING ENVIRONMENT

A Compendium of the Award Winning Entries

2022-23

A HUDCO - HSMI Publication
World Habitat Day 2023 Release

EDITORIAL BOARD

Editor-in-Chief:
Mr. M. Nagaraj
Director (Corporate Planning)
HUDCO

Managing Editor:
Dr. Sukanya Ghosh
Executive Director (Training)
HUDCO's HSMI

Compiled and Edited by:

Shri Jeevan Singh Sahota
Joint General Manager (Projects)/
Fellow, HUDCO's HSMI

Ms. Neetu B. Malhotra
Joint General Manager (Projects)/
Fellow, HUDCO's HSMI

Contact:

Human Settlement Management Institute

Research and Training Wing of HUDCO, HUDCO House, Lodhi Road, New Delhi – 110 003
Telephone: 011-24308600, 24308608; Fax 011-24365292
Email: edt@hudco.org, cpd@hudco.org

Housing and Urban Development Corporation Limited

Core 7-A, HUDCO Bhawan, India Habitat Centre, Lodhi Road New Delhi – 110 003
Telephone (EPABX) 011-24649610-23, 24627113-15, After Office Hours: 011-24648193-95
Fax No. 011-24625308
Website: www.hudco.org.in
CIN: L74899DL1970GOI1005276
GST No. 07AAACH0632A1ZF

HOUSING AND URBAN DEVELOPMENT CORPORATION LIMITED

An ISO 9001:2015 certified organization

HUDCO AWARDS FOR BEST PRACTICES TO IMPROVE THE LIVING ENVIRONMENT

A compendium of the Award Winning Entries

2022-23

A HUDCO - HSMI Publication

Housing and Urban Development Corporation Limited
New Delhi – 110 003

DISCLAIMER

The projects features in this publication are the award-winning entries of the 'HUDCO Best Practices Award to improve the Living Environment' for the award cycle 2022-23. These award-winning entries have been selected by a specially constituted Jury Committee comprising of eminent professionals in the habitat sector. The information related to the features projects has been provided by the respective participating applicant institution while submitting their application/ entry for the HUDCO Best Practices Award in the form of write-ups, presentation and other accompanying material. HUDCO does not take responsibility for the accuracy, technical soundness or completeness of the contents of these features projects/ contents of these entries and shall not be liable for any loss or damage that may be occasioned directly or indirectly through the use or reliance on the contents of this publication.

The contents given in this publication are for the general reference only and is not intended to replace the need for professional advice in any particular subject matter. Further, all the rights are with the respective owner/ promoter of the features projects. For further information, kindly contact the the respective participating institutions directly.

INDEX

Foreword i

Preface iii

Acknowledgments v

About the HUDCO Best Practices Awards (2022-23) vii

Jury Committee Profile ix

HUDCO Best Practices Award (2022-23) Winners x

Theme-1: Urban Governance

1. **Preparing Need-Based and Implementable GIS-Based Development Plans by Participatory Approach;** (Winner: Director, Town Planning, Maharashtra State) 1

Theme-2: Housing, Urban Poverty and Infrastructure

2. **Integrated Recreational Wellbeing Facilities Redevelopment of theme based Three parks (Chandra Park, Madhukar Shah Park, Hari Singh Gaur Park) and Development of City Lungs -Parks and Urban Green;** (Winner: Sagar Smart City Limited, Madhya Pradesh) 5

Theme-3: Urban Transport

3. **Sky Walk at Shakthan Nagar-(AMRUT Scheme);** (Winner: Thrissur Municipal Corporation, Kerala) 9

4. **Smart Road-2 under Development of Smart Road Corridor of 12.35 Km (5 Roads in ABD Area)- Phase 1;** (Winner: Sagar Smart City Limited, Madhya Pradesh) 13

Theme-4: Environmental Management, Energy Conservation and Green Building

5. **Tree Plantation & UGD Wastewater utilization;** (Winner: City Municipal Council, Karwar, Karnataka) 17

Theme-5: Sanitation

6. **Swachh Virasat;** (Winner: Swachh Bharat Mission (U), Urban Development Department, Govt. of Uttar Pradesh) 20

7. **Effective Waste Handling-Segregation, Processing, Recycling & Scientific Landfills;** (Winner: Swachh Bharat Mission, Directorate of Town Panchayat, Tamil Nadu) 25

Theme-6: Urban Design, Regional Planning, Inner-City Revitalization and Conservation

8. **Adaptive Reuse of Old Abandoned Heritage while Reviving Traditional Materials and Practices of Construction by Capacity Building (focussing on Conscious and Sustainable Approaches),** (Winner: Studio Mandala) 29

FOREWORD

The "HUDCO Award for Best Practices to improve the Living Environment" was established during the financial year 2011-2012 to recognise initiatives, which have improved the living environment in our cities and towns with an objective to create awareness among the policy & decision makers and urban practitioners by managing, sharing knowledge and dissemination among the stakeholders so that lessons learnt from such best practices and innovative initiatives could be applied in similarly positioned other cities and towns as well as be used in training , reports and such other policy and development activities.

The award over the years, has recognised the best practices adopted and implemented by the various urban local bodies, state government agencies, NGOs and other public and private sector institutions that have demonstrated valuable contribution to sustainable development through their innovation, managerial skills, implementation efficiency and partnership between various stakeholders in the areas such as urban governance, housing, urban poverty & infrastructure, urban transport, environmental management, energy conservation & green buildings, sanitation, urban design, regional planning, inner-city revitalization & conservation , disaster preparedness , mitigation and rehabilitation.

The entries received for the award are scrunitised by a Jury Committee comprising of the domain experts with rich and diverse experience in the habitat sector. For the award cycle for the FY: 2022-2023, HUDCO received 83 entries and after detailed examination and physical verification of the shortlisted entries, the Jury committee recommended seven awards. These awards were given to the winner institutions during the HUDCO Annual Day event on April 25, 2023.

I am pleased to note that the research & training wing of HUDCO, the Human Settlement Management Institute (HUDCO's HSMI) is bringing a compendium of the winning entries for Best Practices Award for the FY: 2022-2023. I am confident that this publication would result in further dissemination of these innovative best-practices and knowledge sharing among the various stakeholders as well as it would encourage other cities and towns to try and adopt some of the features and learning of these best practices with suitable modifications. Further, it would also help urban practitioners to use this compendium in further research, training in urban planning and development activities.

I commend HUDCO's HSMI for their efforts in bringing out this compendium documenting the award-winning entries for the HUDCO award. I also take this opportunity to thank all institutions, which participated in this initiative by sending their entries. I would also like to convey my sincere thanks to the members of the Jury Committee under the able leadership of Prof. Chetan Vaidya for undertaking the scrutiny and detailed evaluation of the entries received for the award.

Kuldip Narayan, IAS
Chairman & Managing Director, HUDCO

PREFACE

India has been urbanising rapidly. The urban population in India was 377 million in 2011 and is expected to reach 675 million by the year 2035. Cities are said to be the engines of economic growth. However, urbanisation also results in pressure on the civic services and urban infrastructure leading to over crowding, traffic congestion, air pollution and lack of adequate employment opportunities. This adds to the challenges faced by the urban planners and the city administrators. Therefore, it has become essential for the urban planning practitioners and the urban development experts to address these challenges by adopting innovative, environment-friendly and climate-change responsive technologies and strategies. For this all stakeholders especially those who are directly involved in the urban management sphere, need to explore newer frontiers for inclusive and sustainable urban development in the country in tandem with the emerging tools, techniques and technologies and such other global initiatives.

In this regard, sharing of knowledge among the stakeholders especially the city managers becomes important. HUDCO as a prime techno-financial institution in the housing and urban development sector, has been undertaking training and research in the habitat sector through its research and training wing, the Human Settlement Management Institute (HUDCO's HSMI) since 1985. HUDCO instituted "HUDCO Best Practices Award to improve the Living Environment" in the year 2011, in order to promote and encourage the efforts in the areas of housing and urban development of various city level institutions such as the urban local bodies, state level agencies, development authorities, Parastatal agencies, NGO's, private & corporate sector entities and the research and academic institutions who have demonstrated outstanding initiatives and has helped address some of the urban challenges facing our cities and towns. The Award consists of a cash prize of Rs. One Lakh, a Certificate and a Plaque. For the financial year 2022-2023, seven awards were announced and the same were given to the winning institutions at the HUDCO Annual Day event on April 25, 2023.

I congratulate HUDCO's HSMI for their efforts in brining out this compendium to document and disseminate the award-winning best practices and I am confident that this publication will help in wide sharing of these best practices among the urban managers.

I extend my heartiest congratulations to all the award winners for their achievement. I also appreciate all other participants who supported our initiative by participating through sending their entries for the HUDCO Best Practices Award to improve the Living Environment. I hope HUDCO's HSMI would continue to receive good participation in future as well for this prestigious Award.

M. Nagaraj
Director (Corporate Planning), HUDCO

ACKNOWLEDGEMENTS

The present compendium of the award-winning entries of 'HUDCO Awards for the Best Practices to improve the Living Environment' for the award cycle 2022-23 has been possible with the sincere efforts and dedicated support and valuable guidance of many officials of HUDCO.

First and foremost, it is my pleasure and privilege to acknowledgement the encouragement and support received from Shri Kuldip Narayan, IAS, Joint Secretary, Ministry of Housing & Urban Affairs (Government of India), and the Chairman & Managing Director, HUDCO. I wish to express my heartfelt gratitude to him for inspiring all the officials of HSMI. I am also grateful to Shri M Nagaraj, Director (Corporate Planning), HUDCO for his valuable guidance and sincere encouragement shown to the HSMI team towards successfully publishing the compendium. I am also thankful to Shri D. Guhan, Director (Finance), HUDCO for his constant support.

The dedicated support provided by all the Regional Offices of HUDCO in disseminating the information on the awards and encouraging agencies to participate is hereby acknowledged and recognized with gratitude. HSMI takes this opportunity to thank all the Regional Chiefs and concerned officers posted at different Regional Offices for their tremendous support to initiate participation of entries for the awards and undertaking the physical verification of the shortlisted best practices in a record time. The immense response received from the participating institutions such as urban local bodies, state government agencies, NGOs, private-sector and other agencies has been very encouraging for us. The whole process was successful only because they responded to our request for participation and they sent their entries for the awards in a time-bound manner. I thank all the officials and heads of institutions of the participating organisations.

Special thanks are also due to all the esteemed members of the Jury Committee of the Award, under the able leadership of Prof. Chetan Vaidya, who devoted their valuable time and evaluated the entries. I sincerely acknowledge the sincere support from all the concerned officials and departments of HSMI as well as HUDCO's Corporate Office, including Administration, Finance, Public-Relations, and Information Technology to name a few.

Finally, the hard work and efforts of the Best Practices team of HSMI led by Shri Jeevan Singh Sahota, Fellow and Ms. Neetu B. Malhotra, Fellow, HSMI deserves appreciation, without which it would not have been possible to bring out this publication.

Dr. Sukanya Ghosh
Executive Director (Training)
HUDCO's HSMI

ABOUT THE HUDCO AWARDS FOR BEST PRACTICES 2022-23

HUDCO Awards for "Best Practice to Improve the Living Environment" has been institutionalized since the year 2011-12 to encourage and acknowledge efforts in these areas and to motivate Government Departments/ Parastatals Agencies/Local Bodies/Development Authorities/NGO's/Private and Corporate Sector/Research and Academic Institutions etc. who have demonstrated outstanding initiatives to encourage innovative and sustainable projects.

HUDCO gives award under the following 7 themes:

1. Urban Governance
2. Housing, Urban Poverty and Infrastructure
3. Urban Transport
4. Environment Management, Energy Conservation and Green Buildings
5. Sanitation
6. Urban Design & Regional Planning, Inner - City Revitalization & Conservation
7. Disaster Preparedness, Mitigation and Rehabilitation

Each Theme has the following sub-themes:

Theme 1- URBAN GOVERNANCE

Sub-themes: Urban management and administration, E-governance/Partnerships with civil society, Participatory budgeting and decision making, Human Resources and leadership development, Decentralization/Devolution of powers, Institutional reforms, Transparency and accountability, Empowerment of Women, Innovative methods of collection of property tax/other taxes/bills, Municipal double entry accounting and Improved service delivery initiatives.

Theme 2- HOUSING, URBAN POVERTY & INFRASTRUCTURE

Sub-themes: Affordable housing, Access to housing ,Access to housing finance/credit, Slum and settlement upgrading and improvement, Application of environment friendly building materials, Cost-effective urban housing including innovative, emerging and disaster resistant technologies in housing, Access to land/services for urban poor, Provision of basic services, Public-Private partnerships/Public-Private-Community partnerships & Community based capacity building/livelihood generation solutions.

Theme 3- URBAN TRANSPORT

Sub-themes: Mass public transport, Environmentally friendly public transport, Traffic bottleneck reduction planning, GPS based initiatives for transport improvement, Urban transport planning, Parking solutions, Transit Oriented Development/Transit Corridor development & Last Mile connectivity.

Theme 4- ENVIRONMENTAL MANAGEMENT, ENERGY CONSERVATION & GREEN BUILDINGS

Sub-theme: Innovative pollution reduction measures at city level, Urban greening, Application of Environmentally friendly technologies at city/building level, integrated assessment, monitoring and control, and "Green" accounting, Tangible measures for ecological sustainability at city/zone level, Energy conservation practices at building/city level, Appropriate and cost effective building materials and construction technology, Green buildings and Green building indicators & water conservation measures/Rain water harvesting at City/building level.

Theme 5-SANITATION

Sub-themes: Solid Waste Management, Sewerage management, Cost effective/eco-friendly/Innovative sanitation solutions & Waste to energy solutions.

Theme 6-URBAN DESIGN, REGIONAL PLANNING, INNER-CITY REVITALIZATION & CONSERVATION

Sub-themes: Smart City solutions, Sustainable/inclusive city planning, Innovative Urban design/New township designs, Innovative regional planning approaches, Urban renewal/Heritage conservation or retrofitting, Inner-city renewal/revitalization & Accessibility improvement for differently abled/vulnerable groups.

Theme 7-DISASTER PREPAREDNESS, MITIGATION & REHABILITATION

Sub-themes: Reduction of vulnerability, Civic awareness and preparedness, Contingency planning and early warning systems, Response capacity, Hazard and risk reduction and mitigation, Post-disaster rehabilitation/reconstruction, Risk assessment and zoning, Gender specific risks and needs, Building bye-laws for disaster mitigation.

The selection criteria are based on Planning and Implementation Processes, Innovativeness, Stakeholder's Participation, Resource Mobilisation and Impact, Sustainability and Replicability. A Jury Committee comprising of eminent professionals with diverse background in the habitat sector, scrutinise each entry received, as per selection criteria.

The winner is given a cash award of Rupees One Lakh each, a Certificate and a Plaque.

JURY COMMITTEE

(For the Award Cycle 2022-23)

Chairperson

Prof. Chetan Vaidya

Prof. Chetan Vaidya is an architect planner with over 30-year long academic, research and consultancy experience of urban planning and development. Presently, he is Independent Director (Non-Executive) of GIFT city Gujarat, proposed financial capital of India.

Members

Prof. Dr. P. S. N. Rao

Prof. (Dr.) P.S.N. Rao is a well-known architect - urban planning expert of the country. Currently, he is Member, High Level Committee on Urban Planning, Ministry of Housing and Urban Affairs, Government of India.

Dr. Renu Khosla

Dr. Renu Khosla is Director of the Centre for Urban and Regional Excellence (CURE). Her work is aimed at unthinking and reimagining slum and inclusive urban development, nudging community-led initiatives that integrate, use an ecosystem and ecological approach to promote resilience.

Dr N. B. Mazumdar

Dr. N. B. Mazumdar is an international waste management expert. At present he is Hon. Chairman, International Academy of Environmental Sanitation and Public Health (IAESPH) since 2018 and Hon. DG, Sulabh International Social Service Organisation (SISSO) from March 2016.

Dr K. K. Pandey

Dr. K.K. Pandey, Professor, Urban Management and Coordinator, Centre for Urban Studies at IIPA has over four decades of experience on extensive research, advisory services and capacity building on urban issues in the area of urban governance and finance.

Dr O. P. Agarwal

Dr O.P. Agarwal was a member of the Indian Administrative Service from 1979 to 2007.. More recently, he was the CEO of the World Resources Institute from June 2017 to September 2022. Currently, he is the Dean of the Indian School of Public Policy, in New Delhi.

Shri Hitesh Vaidya

Shri Hitesh Vaidya in his current capacity as the Director of the National Institute of Urban Affairs (NIUA) is playing a pivotal role in addressing urban challenges through different lenses and significantly impacting the urban discourse.

Winners of the HUDCO Best Practices Award to improve the Living Environment (FY:2022-23)

S. No.	Theme/ Category	Title of the Best Practice	State	Name of the Winner institution
1	Urban Governance	Preparing Need-Based and Implementable GIS-Based Development Plans by Participatory Approach	Maharashtra	Director, Town Planning, Maharashtra State
2	Housing, Urban Poverty and Infrastructure	Integrated Recreational Wellbeing Facilities Redevelopment of Theme Based Three Parks (Chandra Park, Madhukar Shah Park, Hari Singh Gaur Park) and Development of City Lungs -Parks and Urban Green	Madhya Pradesh	Sagar Smart City Limited
3	Urban Transport	Sky Walk at Shakthan Nagar-(AMRUT Scheme);	Kerala	Thrissur Municipal Corporation
4	Urban Transport	Smart Road-2 under Development of Smart Road Corridor of 12.35 KMs (5 Roads in ABD Area)- Phase 1	Madhya Pradesh	Sagar Smart City Limited
5	Environmental Management, Energy Conservation and Green Buildings	Tree Plantation & UGD Wastewater utilization	Karnataka	Karwar City Municipal Council
6	Sanitation	Swachh Virasat	Uttar Pradesh	Swatchh Bharat Mission (U), Urban Development Department, Govt. of Uttar Pradesh
7	Sanitation	Effective Waste Handling, Segregation, Processing, Recycling & Scientific Landfills	Tamil Nadu	Swachh Bharat Mission, Directorate of Town Panchayat, Tamil Nadu
8	Urban Design, Regional Planning, Inner-City Revitalization and Conservation	Adaptive Reuse of Old Abandoned Heritage While Reviving Traditional Materials and Practices of Construction by Capacity Building (Focussing on Conscious and Sustainable Approaches)	Uttarakhand	Studio Mandala

Preparing Need-Based and Implementable GIS-Based Development Plans by Participatory Approach

Director, Town Planning (Maharashtra State)

A GIS-based Development Plan is prepared through a participatory approach involving the active involvement and collaboration of stakeholders in the planning process. The objective of developing common digital geo-referenced base maps and land use maps using Geographical Information System (GIS) in each AMRUT city is to formulate Master Plans. These maps serve as a crucial foundation for urban planning and development in the cities.

BACKGROUND

The Maharashtra Regional and Town Planning Act, 1966 mandates newly constituted Municipal Councils and Nagar Panchayats to prepare development plans within three years of their inception. Using traditional approaches, the normal process of plan preparation takes a few years. Over the course of two years, the project involved the drafting of 106 Development Plans in GIS format, with the collaboration of stakeholders. The initiative ensured uniformity in landuse plan preparation and verification by developing a standardised Operating Procedure for development plan preparation in the state, a first in the country.

ESTABLISHMENT OF PRIORITIES

- The objective is to develop common digital geo-referenced base maps and land use maps using Geographical Information System (GIS) in each AMRUT city to formulate Master Plans. Using a Geographic Information System, development plans integrate attribute data with spatial plans, and all map data can be accessed with just a click.
- Stakeholder meetings were organized at the local level to consult all stakeholders and take into consideration the concerns of the residents before framing the proposals. A SWOT analysis is performed based on the inputs from stakeholders. Town specific norms are evolved as per the SWOT analysis, planning proposals are then framed based on the tandard planning norms. Standard Operating Procedure for preparation of development plans and verification of plans is prepared, format of deliverables, check points, timelines are defined. Land utility was optimized by proposing an appropriate mix of remunerative and non-remunerative land use.
- The Standard Operating Procedure (SOP) was defined by the Directorate of Town Planning. The SOP included defined milestones, activities to be done by the vendors and verifying officers, timelines for each of the activities and the deliverables with their standard format. The SOP ensured the plans were prepared in a standard format and verified as per the pre-defined checklist. A standard Geo-database was followed for all plan preparation, which was compliant with AMRUT guideline and had all GIS layers and their specifications predefined.

PROCESS

- The Govt. directives were issued to all ULBs to declare their intention for preparation of plans. To facilitate project management, the state was divided into eight clusters. As part of the process of empanelling private agencies, the Directorate of Town Planning published cluster-by-cluster lists, and once the RFP had been published, bids were invited from all over the country for the same. At the Directorate level, agencies empanelled for different clusters were assigned work, and divisional officers issued work orders to prepare the Development Plans.
- The Existing Land Use maps were being prepared by the private agencies using the Standard Operating Procedure published by the Directorate of Town planning. Based on the TCPO guidelines, the base maps were prepared using drone technology, and the proposed land use maps were prepared by the relevant Town Planning Officers working with private agencies. The entire development plan is prepared on the GIS platform, using layers defined in AMRUT guidelines. While preparing proposed land use plans, stakeholders are involved and town-specific norms are developed by the concerned Town Planning Officer.

- A customized survey was developed with stakeholder engagement to identify citizens' concerns and needs. The needs of the city's cultural requirements and all other social requirements were also taken into account. They also explained their immediate, medium-term, and long-term needs.
- Details of stakeholder perspectives observed during the discussion, analysis of statistical data, and physical survey of the city are used as the basis for the city's strengths, weaknesses, and opportunities threats (SWOT analysis). SWOT analysis has helped develop city-specific criteria that help urban planners identify city-level and city-level amenities needed for a city. Focus group interviews were also conducted, providing an opportunity to actively explore review questions in an interactive manner with a small group of stakeholders.
- Interested parties were notified well in advance of the meeting date by posting notices on bulletin boards and publishing notices in local newspapers. To collect samples, we distributed special surveys in print, on social media, or digitally by filling out a Google form. A few participants expressed their opinions orally during the meeting.

लोकसत्ता पालघर

कालावधीपूर्वीच सुधारित विकास आराखडे

जव्हारला वैशिष्ट्यपूर्ण पर्यटनस्थळ करण्याचा प्रयत्न

Source : News Published in Lok Satta Newspaper, Palghar.

- Town Planning officials have formally communicated with various government departments and received their requirements. To facilitate face-to-face interaction, city planning officials and chief executives arranged meetings with all stakeholders in the city. The conference was attended by experts from various fields. Entrepreneurs, journalists, social workers, local political representatives, businessmen and professionals in the fields of education, medicine and prominent citizens of the city.
- Also, head of the various departments in the council took active participation in the meeting and shared their views from stakeholders' and towns perspective. The views and perspectives of the stakeholders were recorded through a questionnaire survey.

Financial Profile (Expenditure incurred on the Practice/Project)

FY 2017 -18	FY 2018 -19	FY 2019 -20	FY 2020 -21	FY 2021-22	FY 2022-23
-	-	-	-	**Rs. 12,31,73,623**	**Rs. 13,57,37,723**

RESULTS ACHIEVED

- The stakeholders' participation was introduced as a means of upholding the concept of public participation into the planning process. Stakeholders' participation not only allowed the people's perception but also diversified the scope of the development planning process through the varied views of the various stakeholders of the society. This definitely has resulted in the reinvigoration of the idea of "Planning by the people, with the people and for the people" into the planning process.
- The Spatial Maps contain attribute data that enables location-based analysis and accurate planning. Large amounts of data can be easily managed with GIS.
- Standard Operating procedure ensured timely completion, transparent verification. AMRUT compliant GIS layers ensured compatibility and interchangeability of plans and generation of thematic specialised spatial data.

SUSTAINABILITY

- Institutional sustainability - Standardised GIS layers, attribute data and their formats, Standard Operating Procedure ensuring uniform practices in preparation and verification, Specific time-lines ensuring completion in time-bound manner.
- Cultural and Social Sustainability - Development Plan that reflects citizen participation and extend the planning process to the grassroots level.

TRANSFERABILTY

As per the Govt. directives, all the future plans will be prepared on GIS platform, using the layers described in the said project, thus replicating the project and its proponents. The empanelment published for this project also allows any planning authority in Maharashtra State to avail the services of the empanelled agency/consortium for preparation of GIS base maps, Existing Land use (ELU) and assistance in Preparation of GIS based Development Plans. The practice of active stakeholders participation, the implementation mechanism followed for public participation will be used from now on for preparation of each and every development plan in the State. With time, and changing circumstances, the said process and the implementation mechanism is expected to improve further.

The Standard Operating Procedure is also expected to iterate and evolve over time, depending on the technology adaptation and the challenges faced during implementation. Validation and ground trotting of the plans prepared in GIS have ensured that these plans are accurate and can be revised over time, accurate thematic maps can be generated with ease in GIS platform.

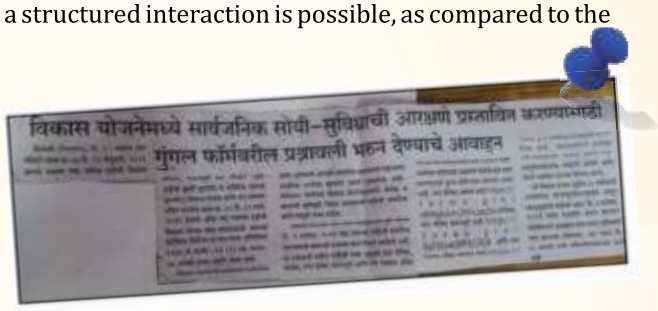
LESSON LEARNED

A brief knowledge and awareness about Development Plan and importance of public participation in the development plan preparation process was specified to the stakeholders during stakeholders' participation. The stakeholder's participation played a vital role in tackling the innate need of the town. The stakeholder's perspective in conjunction with the technical analysis allowed a practical approach in the planning process.

Identification of requirements of town and its residents through a structured interaction is possible, as compared to the earlier conventional method of planning proposals framed by the respective town planning officer based on the conventional planning standards prepared for all towns.

REFERENCES

Source – News published in Palghar Newpaper Loksatta



Source: News published in Maharashtra Gazzette on 03.09.2022, regarding publication of draft Development Plan of Poladpur Nagar Panchayat

Source – News published in Hingoli on 3.8.2022

Shri Avinash Patil, Director, Town Planning, Maharashtra State, receiving the award from Shri Manoj Joshi, IAS, Secretary, Ministry of Housing and Urban Affairs, Government of India.

CONTACT INFORMATION

Title of the Best Practice	:	Preparing Need-Based and Implementable GIS-Based Development Plans by participatory Approach
Location of the Best Practice	:	All ULBs of the Maharshtra State
Name of the Winner (Applicant Agency)	:	Directorate, Town Planning, (Maharashtra State) Pune-411001, Maharashtra
Address	:	Directorate, Town Planning, (Maharashtra State) Pune-411001, Maharashtra
Contact Person	:	The Director, Town Planning, Maharashtra State
Phone	:	02026122076
Email	:	dirtpvd.pune@maharashtra.gov.in
Website	:	dtp.maharashtra.gov.in

* * * * * * *

Integrated Recreational Wellbeing Facilities Redevelopment of Theme Based Three Parks (Chandra Park, Madhukar Shah Park, Hari Singh Gaur Park) and Development of City Lungs -Parks and Urban Green

Sagar Smart City Limited (Madhya Pradesh)

The project aims to improve the quality of life in urban areas by enhancing the environment, regulating temperatures, and offering recreational spaces for the public to enjoy. Theme-based parks are designed to entertain visitors through immersive experiences and themed attractions. By integrating nature into the fabric of cities, City Lungs aims to create sustainable and livable urban environments for current and future generations.

BACKGROUND

Topographically Sagar City is situated in the hilly terrain with lots of green spaces all around. It has great scenic beauty. There were many green spaces available in the town, which were not usable by the town-dwellers due to lack of basic infrastructure, like pathways, lighting, play equipment etc. Sagar Smart city developed these spaces as an important community spaces and provided opportunity for physical activity and to improve the green cover in the town by providing adequate planting of trees.

In order to enhance the recreational value of the town, Sagar Smart City Ltd. (SSCL) identified four parks for the redevelopment under the Smart City Mission as a pilot Project. The objective was to provide attractive, safe and usable green spaces to the public at large, with special emphasis on the provision for child-friendly and elder-friendly components. These will also be effective in mitigating the urban heat island effect in the future and will be a valuable environmental resource as the town continues to grow in both size and population. These parks have improved the aesthetic value of the town as well. It has created positive attitudes among the residents. After the successful implementation of this project, citizens of Sagar have improved environment within their neighbourhoods, with public amenities and facilities within the park. They shall have the option for a free gym to improve health and well-being. Children have play areas with better means of entertainment, and better areas for Performing Arts, which shall transform the concept of "Park" amongst the citizens of Sagar. With the successful implementation of the Pilot projects, now Sagar Smart City Limited has decided to develop all the neighbourhood parks under PAN City Proposal in phase wise manner. Development of another ten community parks and play areas are completed and 28 parks are under progress.

Glimpse of some of the executed projects

KEY DATES

Dates	Significance/ Achievement
12-06-2018	Work Order Issued
03-11-2019	Date of Project Completion

ESTABLISHMENT OF PRIORITIES

With the successful implementation of this proposed project, citizens of Sagar will have improved environment within their neighbourhoods with all public amenities and facilities within the Neighbourhood Park. They have the option for a free gym to improve health and well-being. Children are expected to have parks with better means of entertainment, better areas for Performing Arts, which would create a new concept of "Park" amongst the citizens of Sagar

MOBILISATION OF RESOURCES

- The project cost is Rs. 8.48 Cr.
- Total strength of manpower – Selected Contractor deployed the Technical Key Personnel on a fulltime basis and other required manpower for the implementation of project such as Project Manger, Architect / Landscape Architect, Support Engineer /Site Supervisor, Electrical Engineer, Quantity Surveyor, Horticulture Specialist, Outdoor Play Field Specialist etc.

RESULT ACHIEVED

The parks are attracting people to rest and walk in this natural beauty, connecting government's major offices and residential areas. Its soothing ambiance appeals people by its light brightening up the park and fountains emphasizing its charm. Four Parks are completed admeasuring 12 Acres, 60% of the street lights are Solar lights which has saved almost 30% of energy consumption. Open Air Theatre (OAT) with a capacity of 300 person is developed. 1.25 Km of Cycle track and 3.2Km of jogging Track which is adjacent to our most prestigious Lakha Banjara Lake Rejuvenation project has also been developed.

SUSTAINABILITY

As the population continues to grow and environmental concerns comming increasingly to the forefront of public knowledge, more and more communities are looking for outdoor spaces that are both beautiful and sustainable. That's why sustainable parks have been such a big trend in the public design space today. A sustainable park is a park that's made to preserve natural resources and promote quality of life for the people around it. It uses existing native plants and geographic features to be more efficient, while also enjoyable. This project is aligned with Sustainable Development Goals. This development is for the citizens and it is going to help to protect the nature which is relatable to SDGs 11- Sustainable Cities and Communities.

TRANSFERABILTY

Chandra Park, Madhukar shah Park, Hari Singh Gaur Parks have been completed on pilot basis and Sagar Smart City Ltd. is taking up several parks like Redevelopment of Multiple Parks Phase – 1 and Redevelopment of Multiple Parks (48 wards) Phase-2 which are under implementation stage. Sagar City has improved health and well-being of its population which has not only created positive attitude in the neighborhood or development of green spaces but also enhanced urban infrastructure by encouraging cultural programs, etc. which could be a motivation to other ULB's.

LESSON LEARNED

One of the most important components for the smart city initiative is a Command Centre for the city from where any smart features or any infrastructure can be monitored and controlled. Under the project SCMCU Centre, Sagar Smart City Limited is constructing a building for the Integrated Command & Control Centre to Integrate all five modules of Pan-city proposals.

Community parks have provided benefits by:

- Contributing to the community identity,
- Providing active and passive recreational opportunities, by Appealing to all ages,

- Contributing to the health and wellness of a community,
- Creating the valuable green spaces.

REFERENCES

Video Link: https://youtu.be/TM9Nf-4yk3U

Glimpse of some of the executed projects

Shri Rajat Gupta, Company Secretary, Sagar Smart City Ltd. receiving the award from Shri Manoj Joshi, IAS, Secretary, Ministry of Housing and Urban Affairs, Government of India.

CONTACT INFORMATION

Title of the Best Practice	:	Integrated Recreational Wellbeing Facilities redevelopment of theme based three parks (Chandra Park, Madhukar Shah Park, Hari Singh Gaur Park) and development of City Lungs -Parks and Urban Green
Location of the Best Practice	:	Sagar City, Madhya Pradesh
Name of the Winner (Applicant Agency)	:	Sagar Smart City Limited
Address	:	2nd Floor, ICCC Building, New Collectorate Premises Sagar- 470002, Madhya Pradesh
Contact Person	:	Company Secretary, Sagar Smart City Ltd.
Email	:	smartcitysagarmp@gmail.com
Website	:	https://sagarsmartcity.org

* * * * * * *

Sky Walk at Shakthan Nagar- (AMRUT Scheme)

Thrissur Municipal Corporation (Kerala)

The primary goal of the project has been to construct a skywalk to improve pedestrian circulation in a congested area while also increasing pedestrian convenience and safety. Skywalk has made it possible to manage crowded junctions by providing an elevated highway, reducing the chance of accidents and promoting pedestrian circulation while improving traffic flow at crowded intersection.

BACKGROUND

Roundabout before installation of Sky Walk

The renewed efforts to plan for pedestrian mobility was given a tremendous boost by the Urban Transport. In a city like Thrissur the ever increasing vehicular growth and lack of adequate pedestrian crossing, the pedestrian commuters often risk their lives while crossing the busy roads and junctions. Development of urban Infrastructure with respect to pedestrian crossing is highly necessitated in Thrissur Corporation area. Thrissur Corporation is one of the most densely populated cities in Kerala. Thrissur city is governed by Municipal Corporation which comes under Thrissur Metropolitan Region. The geographical area of Thrissur Corporation after its inception by merging nearby panchayaths is 101.42 Sq. Km. At present there are 55 wards in the corporation. The city lies at 10.52°N 76.21°E and has an average altitude of 2.83 metres above mean sea level. The city is located in midland regions of Kerala, with an extended part of Thrissur plains. As of 2011 India census, Thrissur had a population of 3,121,200. Males constitute 1,480,763 of the population and females 1,640,437. In Thrissur 303,950 of the population is under the age of 6. Safe roads for pedestrians is a popular catchword now-a-days. Like other cities in Kerala, pedestrian volume in Thrissur corporation area is very high especially at peak hours. During next 20 years, pedestrian problems in Thrissur will be a serious challenge for city planners to solve. Thrissur is quickly emerging as a growing city which certainty would need modern forms of pedestrian crossing for the daily commuters who are fed up with traffic jam and congestion. At present there are many problems being faced by road users in city area especially in Shakthan Round with limitation of land space and traffic congestion. Pedestrians are one of the most vulnerable entities of the transportation system. It is observed that there is an increase in number of conflicts between pedestrian and the vehicles in the Shakthan Round. The inadequate facility provided for the pedestrian movement at this round where four major roads are meeting, often poses conflicts between pedestrian and motor vehicle due to sharing a limited space of road. This increases the road accident ratio.

ESTABLISHMENT OF PRIORITIES

The overarching vision of this project is to develop the pedestrian crossing facilities at the Shakthan Thamburan Round, where four main roads are meeting. Shakthan Nagar is one of the most congested locations of the city with wide roads and heavy vehicle traffic. The major buildings and institutions that are located in this areas are:

1. Shaktan Thampuran Private Bus Stand, Thrissur
2. South Indian Bank headquarters
3. D.C. Books
4. Trichur Heart Hospital
5. Thrissur Vegetable Market
6. Balya Children Hospital
7. Thrissur City Traffic Police Headquarters

8. Thrissur Police Club
9. Thrissur Fire Force Station
10. LIC Area Office
11. Pattalam Market
12. Thrissur Fish and Vegetable

Roundabout after installation of Sky Walk

The Shakthan Nagar is an intersection point of four roads. A roundabout is located here from where vehicles move towards Ernakulum, Palakkad, Kozhikode etc. The state buses cross this circle on its way to KSRTC stand. Two National Highways NH47 and NH66 pass through Thrissur and this Round About is an integral part for the routes connecting to them. A bus stand and three bus stops are also located near to this junction. Public places such as exhibition ground, vegetable market, fish market, bus stand etc. are located around the roundabout. These places are separated by the radial roads meeting at the junction. So the pedestrians need to be very careful while crossing the road due to heavy vehicular traffic and large width.Often people struggle to cross this junction. Private buses from the nearby Shakthan Bus stand is plying around this roundabout for entering and leaving the bus stand. No traffic signal is provided at this junction. The signal is managed by policemen and heavy traffic makes their task very difficult.

PROCESS

The heavy traffic volume and crowd make roundabout an accident prone area for pedestrians. Currently there is no foot over bridge or subway at the junction. The possibility of foot over bridge or subway was examined at this junction. Pedestrians needs to cross the four roads at this roundabout, which warrants the provision of four foot over bridges or subways. This requires huge expense. The land required for accommodating the whole FOB at a particular area is also more. Moreover if a person from bus stand wants to cross the roads to reach the vegetable market, or any other opposite location he has to use minimum two foot over bridges by climbing up to cross one road then coming down, again going up to cross the next road and down to reach the market. The same process have to be followed for crossing diametrically opposite places at this roundabout. People slowly resort to avoid the foot over bridges and began to walk again through the busy roads. Taking cognizance of the situation and demand, a skywalk is best suited at this roundabout. This will ease the movement of traffic and keep pedestrian safe crossing at Shakthan Junction. Skywalk proposed with multiple entry and exit points is the best suited at this location.

Undoubtedly the Shakthan Thampuran Round is an attractive location of the city. The citizens of Thrissur city do deserve the best form of a rapid pedestrian crossing system at this congested Round About. Sky walk is the best suitable crossing connecting all the four roads. This will enhance the image of the city and cater to the pedestrian needs of not only the local citizens but also that of the visitors of the city. Pedestrian crossing facilities are generally providing for the safe passage of pedestrians when they cross roads. The major benefits from the project are the socio-economic benefits. By providing advertisements, the ULB can find revenue from the proposed infrastructural facility, and a part of the same can be used for the maintenance of the proposed pedestrian walkway. However it is not recommended as studies suggest that advertisements in road distract drivers and increases the risk of accidents. Advertising around the hand rails may encourage illegal activities as this will provide a concealed area, hence not advisable to provide hoardings around the hand rails. Therefore, the revenue may be foregone. ULB has to look for alternate source of fund for maintenance. The major expected expenses are the maintenance charges. The maintenance of the skywalk include periodic painting works of the pathway structure, retrofitting of rusted components of roof, handrails and replacement of electrical components and periodic cleaning. Maintenance cost is considered as 2% of the total civil cost. The frequency of periodic maintenance depends on environmental factors and intensity of usage.

MAIN FOCUS OF THE BEST PRACTICE

a. Development of Urban Infrastructure

b. To find a permanent solution for hassle free movement of pedestrians along and across the streets

c. Increases safety among pedestrians by reducing accidents

d. Improves traffic flow at the junction

SALIENT FEATURES

S. No.	ITEM	VALUE
1	Outer diameter of Skywalk	83m
2	Width of walkway	3 m
3	Steps / Lifts / Escalator	Steps
4	Material of Construction	
	Frame	Structural Steel
	Floor	RCC Slab
	Roof	Galvalume Roofing
	Handrails	SS hollow tube
	Foundation	RCC

FINANCIAL PROFILE

Organization	Total Santioned Amount (Rs. Crore)	Expenditure (Rs.Crore)
Owner– Thrissur Municipal Corporation (20%)	1.06	0.52
Partner I- Govt. Of Kerala (30%)	1.59	0.78
Partner II – Govt. Of India (50%)	2.65	1.31
Total	5.3	2.61

Shri Manoj Joshi, IAS, Secretary, Ministry of Housing and Urban Affairs, Government of India, presenting the Award to the officials of the Thrissur Municipal Corporation.

CONTACT INFORMATION

Title of the Best Practice	:	Sky Walk at Shakthan Nagar- (AMRUT Scheme)
Location of the Best Practice	:	Shakthan Nagar, Thrissur, Kerala
Name of the Winner (Applicant Agency)	:	Thrissur Municipal Corporation (Kerala)
Address	:	Secretary Thrissur Municipal Corporation, Thrissur- 680001 (Kerala)
Contact Person	:	Secretary, Thrissur Municipal Corporation
Email	:	secretarythrissurcorporation@gmail.com
Website	:	http://thrissurcorporation.lsgkerala.gov.in

* * * * * * *

Smart Road-2 under Development of Smart Road Corridor of 12.35 KMs (5 Roads in ABD Area)- Phase 1

Sagar Smart City Limited (Madhya Pradesh)

The project involves the integration of innovative technologies and systems in order to develop a smart and sustainable transportation infrastructure. The smart road technology has improved the traffic management, boosted road safety, decreased energy consumption, and offered road users with a more efficient and delightful travel experience.

BACKGROUND

City roads generally lacks to facilitate all road users and are inclined towards facilitating vehicles. Pedestrian friendly infrastructures facilities like marked crossing, signalized pedestrian crossing sidewalks, etc. are absent in most part of the city. Shops, restaurants, building entrance and trees are not properly aligned and do not encourage sidewalks. Improper intersection design with lack of signalized pedestrian crossing and traffic rules enforcement makes walking unsafe. In light of these, Sagar Smart City Ltd. undertook this project to address some of the concerns mentioned above.

A Smart City's roads are designed equally for pedestrians, cyclists and vehicles; and road safety and sidewalks are paramount to street design. Traffic signals are sufficient and traffic rules are enforced. Shops, restaurants, building entrances and trees line the sidewalk to encourage walking and there is ample lighting so the pedestrian feels safe day and night.

Project Intervention:

- Resurfacing and new construction of road (CC)
- Construction of road side Drains, Dividers and retaining wall
- Construction of Utility Duct (for LT & HT electrical cables)
- Laying of multi duct of OFC cables
- Construction of Culvert (HPE and Box type culvert)
- LED Street Lighting and High Mast Installation
- Line shifting (HT, LT poles with cables and Utility shifting
- Landscaping at Divider and along footpath
- Fire hydrant system (in densely populated areas
- On street Smart Parking
- Street Furniture and Bus stops
- Tree Transplantation
- Existing water supply shifting

GLIMPSES OF SOME OF THE EXECUTED PROJECTS

KEY DATES

Dates	Significance/ Achievement
31-08-2020	Work Order Issued
26-11-2022	Completion of the Project

MAIN FOCUS OF THE BEST PRACTICE

Evolving technologies from a variety of industries are enabling smarter and safer roadways. These are the major driving factors for advancements included in this report:

1. Electrification Infrastructure Improvements
2. Safety and Improved User Experience
3. Renewable Energy Generation

Further, "Maximum operating speed of vehicles" and "Safety level" are two parameters whose values have increased over time due to a concomitant reduced amount of road pavement

ESTABLISHMENT OF PRIORITIES

The city is generally designed mainly for the automobile. Daily life without a car requires long bus rides. Walking is difficult and often dangerous and there are few pavements, existing pavements needs repair and lack trees to provide shade for pedestrians and marked pedestrian crossings are rare. New buildings have their main entrances set-back from the street, sometimes with large driveways or parking lots separating them from the street, and sometimes are enclosed by gates. Traffic signals are often disobeyed. Therefore, work on the first 4 lane road inside the city in Sagar was undertaken out of 5 roads included in Smart Road Corridor Phase-1(main road from Tili Tiraha to Civil Line Chauraha,) in which work of duct, multi-duct, median, path-way, greenery and landscaping has been done.

PROCESS

There are 4 Smart Roads (SR) under Phase-1 and the cost was Rs. 79.46 Cr. SR-2 is fully completed. Executing agency had to have the manpower capability and had to produce documentary evidence having the adequate staff on their establishment prior to signing of the contract agreement and during the duration of contract. In this regard the Agency submitted undertaking stating that this staff or equivalent was deployed on site after award of contract as per necessity instruction of Engineer–in–Charge. Following key personnel were - Project Manager, Construction Manager, Highway Engineer (Design), Engineering Manager (Design), Construction Quality Control Manager, Safety Manager, Sr. Electrical Engineer, Sr. Mechanical Engineer, Sr. Surveyor, Quantity Surveyor and Material Engineer. The Contractor provided the installation of the facilities and such skilled, semi-skilled and unskilled labor as was necessary for the proper and timely execution of the Contract. The Contractor was encouraged to use local labor that has the necessary skills.

RESULT ACHIEVED

Smart road technology has helped speed up the flow of traffic with real-time processing, reducing congestion and emissions, assist in optimizing traffic flow and managing road conditions, creating a more sustainable environment within cities. There are many types of devices that enable smart road technologies such as IP CCTV cameras, smart traffic lights, condition and weather monitoring systems, and digital signage. These devices collects and analyze data in near-real time resulting in city realising several benefits such as less congested roads, improved traffic and pedestrian safety, enhanced parking, better connectivity to the different part of city, proper greenery in city and better traffic mobility etc.

SUSTAINABILITY

The Smart Roads are directly connected with various city areas and also providing the better connectivity and traffic mobility for the citizens fulfilling some of the objectives of the Smart City Mission announced by Ministry of Housing and Urban Affairs, Government of India.

TRANSFERABILTY

Smart Road-2 (SR-2) has been completed and has provided several other roads like Smart Road Phase-1, Smart Road Phase-2, Smart Road Phase-3 which are under implementation stage. The technologies used in smart roads are:

- General smart road technology,

- Solar powered smart roads,
- Glow in the dark technology,
- Interactive lights
- Electric priority lanes,
- Weather detection technology,
- Traffic detection technology

Scalability in Infrastructure:

- The Smart Road system will support vertical scalability & can be implemented in other Districts & ULB's of Sagar Division.
- The implementation of ITMS at the *Makroniya* and the Cantt Board Square where in the entities are keen to replicate the existing model (SSCL Installed 2 ITMS at Cantt. Area and 1 ITMS at Adjoining ULB).
- Provides data for further designing of mobility plan. The data available can be used in studies related to the town planning and other strategic plans & for Data Monetization.

LESSON LEARNED

- The project has provided improved pedestrian and cycling friendly infrastructure facilities on all major streets of the city with integrated public transportation.
- A strictly enforceable strategy to enforce traffic rules and regulations has been adopted.
- CBD area has been transformed into a non-motorized area.
- Road safety to pedestrians using smart monitoring system has been introduced.
- A pedestrian friendly infrastructure has been provided.

REFERENCES

Video Link : https://youtu.be/xWMCghFvcwQ

Shri Rajat Gupta, Company Secretary, Sagar Smart City Ltd. receiving the award from Shri Manoj Joshi, IAS, Secretary, Ministry of Housing and Urban Affairs, Government of India.

CONTACT INFORMATION

Title of the Best Practice	:	Smart Road-2 under Development of Smart Road Corridor of 12.35 KMs (5 Roads in ABD Area)- Phase 1
Location of the Best Practice	:	Sagar City, Madhya Pradesh
Name of the Winner (Applicant Agency)	:	Sagar Smart City Limited
Address	:	2nd Floor, ICCC Building, New Collectorate Premises Sagar- 470002, Madhya Pradesh
Contact Person	:	Company Secretary, Sagar Smart City Ltd.
Email	:	smartcitysagarmp@gmail.com
Website	:	https://sagarsmartcity.org

* * * * * * *

Tree Plantation & UGD Wastewater Utilization

Karwar City Municipal Council, State Govt. of Karnataka

The usage of processed wastewater from the sewage treatment plant in the project is a long-term and useful practice for water conservation and environmental protection. Public awareness, stakeholder collaboration, and regulatory framework have played a crucial role in implementing and encouraging the safe and effective use of processed wastewater.

BACKGROUND

Karwar is a city in the Uttara Kannada district of Karnataka. Karwar, popularly known as the 'Kashmir of Karnataka', is situated in the Western coast of South India at the bank of the Kali River. Being a port city, Karwar is a hub for agriculture and tourism. The city of Karwar has an evergreen forest and Konkan railway station in the east, the Arabian Sea and the Rabindranath Tagore beach in the west, the nation famous "INS Kadamba" naval shipyard in the south and the Kali River in the north. Karwar shares the border with neighboring state Goa. Agriculture and fisheries are the main occupation of the people.

At Gandhinagar, in City Municipal Council Karwar, STP of 1.5 MLD capacity has been constructed by KUIDFC during the year 2008-09 at a cost of Rs. 35 crores. But due to the fact that the said system is not functioning properly, it was left as it is and in year 2011 during the administration period STP was handed over to the Karwar Municipal Council. But till 2019, waste water was being released into the sea through the city's main canal, Kone Nala, without taking any action. Due to this many complaints were received daily from the neighboring public. Since the sewage water was purified by Surface areator technology, the water quality was not good and the surrounding atmosphere was full of bad smell. The UGD network also had 400 unauthorized sewerage connections.

KEY DATES

DATES	Significance/ Achievement
2008-09	Construction and completion of STP
2011	Handing over of STP to Karwar Municipal Council

ESTABLISHMENT OF PRIORITIES & PROCESS

- First of all, a detailed action plan was prepared to repair the sewage system, to treat the sewage water and recycle the treated water.
- Accordingly repair work of all sewer pipelines and chambers was undertaken.
- IP stations have been repaired, installed generator system and hired 3 pump operators to ensure 24 Hrs smooth flow of waste water to sewage plant.
- Unauthorized UGD connections have been regularized by imposing penalty. A total of 1907 houses in 8 wards have been provided UGD connection and the service charge is collected at 98% of the total demand every year.

Sewage Treatment Plant

- In order to purify the water in good quality, A German technology called MBR has been adopted. This work is being carried out efficiently to get crystal clear purified water. Now there is no bad smell. Rs 1.70 crore has been allocated for this work.

- Construction of bund for storage of purified water near Kone Nala on the beach, using HDPE liner is in progress.
- In order to transport purified water, scrapped municipal waste collection 407 vehicle is repaired and fitted with a water tanker and named it as "Parisara Vahana".
- Planting of saplings on the road sides and between the dividers by collecting Rs 1000 per sapling from the donors and the sapling planting program is conducted with inaugurating by the Hon'ble District In-charge Minister every year on August-15. Each plant is named after the donor. Every three days, the treated sewage water will be carried out through the tanker to feed the plants. 3000 saplings have been planted in a period of three years. And the plan of using purified sewage water to parks and selling it to builders in construction of building is in process.

Process Control Panel

RESULTS ACHIEVED

- A vehicle that was supposed to go to Gujri was converted and used as a water tanker.
- By planting trees the sides and divider of the road, CMC Karwar is making the city become beautiful and as well as protecting the environment.
- The area around the sewage treatment plant is odor free because of MBR technology. Purification video link: https://www.facebook.com/100050574798225/videos/467815545096218/
- Purified sewage water is being recycled as per the norms given by NGT. By this underground water is being economized.
- Treated sewage water is sprayed on the road to prevent dust from flying.

SUSTAINABILITY

- The drainage system is maintained with a high standard.
- Illegal connections detected and regularized. As the user fee collected and maintenance cost of STP is equal, the maintenance work is smooth.
- Emphasis on water reuse and commercialization.

Collection Tank & Screen

TRANSFERABILITY

By planting plants in the city limits, environmental protection can be gained along with recycling of waste water

Sludge Drying Beds (Sludge taken for Composting) STP View

Saplings planted along road sides

Membrane Bio Reactor set up

MBR Chamber

CONTACT INFORMATION

Title of the Best Practice	:	Tree Plantation & UGD Wastewater utilization
Location of the Best Practice	:	Karwar, Karnataka
Name of the Winner (Applicant Agency)	:	City Municipal Council, Karwar, Karnataka
Address	:	City Municipal Council, Karwar, Karnataka
Contact Person	:	Commissioner, City Municipal Council, Karwar
Email	:	itstaff_ulb_karwar@yahoo.com

* * * * * * *

Swachh Virasat

Swachh Bharat Mission (U), Urban Development Department, Govt. Of Uttar Pradesh

An initiative of Swachh Bharat Mission (U), Urban Development Department, Govt. Of Uttar Pradesh in 75 districts of the state for environmental improvement of Heritage Sites. "Swachh Virasat" is funded from CSR and IEC funds. The removal of garbage from the vicinity of the heritage sites has transformed the visitor's experience at these sites. The successful implementation of the "Swachh Virasat" initiative with community involvement would provide a model for future cleanliness efforts in the state through collective action.

BACKGROUND

"Swachh Virasat" is an initiative aimed at transforming the heritage sites in Uttar Pradesh by solving the issue of solid waste management in and around the sites. The initiative is a part of the "Swachh Bharat Mission" and is executed by the SBM (U), Government of Uttar Pradesh. The agencies involved to ensure the sustainable upkeep of these heritage sites include Directorate, Swachh Bharat Mission (U), State Govt of Uttar Pradesh, Urban Local Bodies and local communities. By addressing the issue of waste management, "Swachh Virasat" not only enhances the aesthetic appeal of these sites but also contributes to a cleaner and healthier environment for future generations to enjoy and appreciate India's rich cultural heritage. The initiative emphasizes the importance of preserving India's cultural and historical legacy while promoting environmental improvement and cleanliness. Before the initiative was taken up, the sites were marked by poor cleanliness, stench and a lack of aesthetic appeal, leading to an overall unpleasant experience for the visitors. "Swachh Virasat" aims to enhance the visitor's experience by promoting cleanliness.

KEY DATES

Dates	Significance/Achievement
01/12/2022	"Pratibadh under Swachh Virasat" (75 hours-75 districts – 750 sites)
14/01/2023	Swachh Virasat started on the occasion of Makar Sankranti
24/01/2023	Concluded on the occasion of UP Sthapana Diwas.

ESTABLISHMENT OF PRIORITIES

The priorities of the "Swachh Virasat" initiative include:

1. IEC (Information, Education, and Communication) activities to spread awareness among the local communities about the importance of preserving heritage sites and the role they can play in achieving this goal.
2. Removal of garbage from vulnerable points at the heritage sites, ensuring cleanliness and a pleasant experience for visitors.
3. Processing of the waste collected to reduce its environmental impact and promote sustainability.
4. Converting the previously garbage-prone areas into "Waste to Wonder" spots, showcasing innovative solutions for waste management and promoting environmental responsibility.

By prioritizing these activities, "Swachh Virasat" aims to create a positive impact on the environment, promote the appreciation and preservation of India's cultural heritage, and provide a clean and aesthetic experience for tourists and local communities alike. The initiative also emphasizes the importance of public participation and stakeholder involvement in achieving its goals.

PROCESS

The process of implementing the "Swachh Virasat" initiative involved overcoming several hurdles, including the collection, transportation, and processing of waste. These challenges were resolved through the active involvement of "Safai Mitra" and volunteer groups who joined the mission. The useful waste was utilized to create "Waste to Wonder" spots and selfie points, while the rest of the waste was transported to processing units for proper disposal. To further mobilize resources, self-help groups, NGOs, and college students were involved in the initiative. A competition was organized at the Urban Local Bodies (ULB) level, and the winner ULB and volunteer groups were felicitated to motivate them. A "Run for Swachh Virasat" was also organized, starting with flying kites on Makar Sankranti and concluding on Uttar Pradesh Sthapana Diwas by Gau Pujan. The "Swachh Virasat" initiative involves the mobilization of technical manpower to effectively address the issue of garbage accumulation at heritage sites. A technical team at the state level collected data on the garbage dumping points and waste generated at these sites. The Urban Local Bodies, along with their "Safai Mitra," played an important role in removing the waste from these points. To ensure efficient and effective implementation, 24x7 real-time monitoring was conducted through the District Control and Command Centers (DCCC). Teams of "Swachh Bharat Mission" district coordinators and divisional managers also played a key role in ensuring the success of the initiative.

Selfie point identified at various locations including around historical monuments, previously prone to garbage accumulation, after the successful removal of solid waste.

The benchmark for the initiative was the complete removal of garbage vulnerable points and the creation of "Waste to Wonder" spots. Through these efforts, "Swachh Virasat" aims to not only enhance the aesthetic appeal of heritage sites but also

A snapshot of the reach of Swachh Virasat

Number of sites: 75 heritage sites in all the 75 districts.

Outreach : 10,90,909 of total people participated in the drive.

Project cost: INR 37,50,000 (funded by the CSR & IEC funds)

Concept: 463 Waste to Wonder Spots has been created after eradication of 750 garbage vulnerable points.

promote environmental improvement and sustainable waste management practices. By engaging local communities, tourists, and stakeholders in the initiative, "Swachh Virasat" has the potential to contribute to the preservation of India's cultural heritage for future generations.

RESULT ACHIEVED

The results achieved through the "Swachh Virasat" initiative has been significant. Quantitatively, a large amount of solid waste has been removed from the vicinity of the heritage sites, greatly improving the cleanliness and aesthetic appeal of these locations. The positive impact of the initiative was reflected in the changed attitudes of both tourists and local people, who expressed their gratitude to the "Swachh Bharat Mission" for their efforts. The elimination of garbage from critical vantage points and odour issues has greatly enhanced the overall visitor experience at these sites. The initiative has also contributed to increased awareness about the importance of waste management and collective responsibility.

Area around Clock Tower cleaned after removal of garbage

The recognition and appreciation received by ULB officers and workers have motivated them to continue their efforts to maintain the cleanliness of heritage sites. The confidence building in the community through this initiative has demonstrated that the government is concerned about improving the living environment. The "Swachh Virasat" initiative has not only transformed the heritage sites but also contributed to the creation of a more sustainable and cleaner environment. By promoting the preservation of cultural heritage, the initiative is playing an important role in promoting India's rich cultural heritage and fostering a sense of pride and responsibility among its citizens.

SUSTAINABILITY

Sustainability of the "Swachh Virasat" initiative is ensured through several parameters:

Social: The initiative has been designed with community participation in mind, and the visible change in the heritage sites has generated positive feedback from the local population. This ensures that the sites remain clean and well-maintained.

Environmental: The removal of large amounts of solid waste from the heritage sites and its proper processing has had a positive impact on the environment. The creation of waste to wonder spots and selfie points promotes a culture of environmental responsibility.

Cultural: The creation of waste to wonder spots and selfie points not only enhances the cultural value of the heritage sites but also makes them more aesthetically pleasing, discouraging people from littering or dirtying the area.

Overall, the "Swachh Virasat" initiative has taken a multi-dimensional approach to ensure its sustainability, combining environmental, social, and cultural considerations. The combination of community involvement, waste management, and cultural enhancement makes the initiative both sustainable and impactful.

TRANSFERABILTY

Replicating the "Swachh Virasat" initiative can be achieved by following a few key steps. First and foremost, a dedicated team consisting of government officials and volunteers is essential to ensure the success of the initiative.

The team should be well-coordinated and work together towards a common goal of improving the cleanliness and aesthetic appeal of heritage sites. Real-time monitoring is also crucial to ensure the effectiveness of the initiative. This can be achieved through the use of technology and regular monitoring by the dedicated team. Additionally, community involvement is key, and efforts should be made to engage local people and raise awareness about the importance of maintaining the cleanliness of heritage sites. Finally, partnerships with local NGOs, self-help groups, and college students can be useful in mobilizing resources and promoting community involvement. The success of the initiative can be measured through regular monitoring of various processes of solid waste management like waste generation, collection, segregation, transportation and disposal. By following these steps, the "Swachh Virasat" initiative can be replicated in other parts of the country, contributing to the preservation of cultural heritage and the promotion of a cleaner and more sustainable environment.

LESSON LEARNED

One of the key lessons learned from the initiative was the importance of recognizing and motivating volunteers. The felicitation of the award winning Urban Local Bodies and volunteer groups served as a source of inspiration and encouraged others to participate in the initiative. This also created a sense of ownership and responsibility among them towards maintaining the cleanliness of heritage sites. Another important lesson learned was the importance of involving the local community. The initiative was successful because it was designed to address the specific needs and concerns of the local people. Regular consultation with the community helped to ensure that their needs were met, and their active participation in the initiative made them feel valued and empowered.

In conclusion, the "Swachh Virasat" initiative provides valuable lessons for future cleanliness efforts. The importance of involving the community, motivating volunteers, and involving the local people cannot be overstated. These elements are crucial in creating a sustainable and impactful cleanliness initiative that addresses the specific needs and concerns of the local community. The "Swachh Virasat" initiative was driven by the motivation to spread cleanliness and awareness among people, with the guiding principle of "Swachhta Parma Dharma." The initiative demonstrated the importance of involving the community in cleanliness efforts and the positive impact that can be achieved through collective action

Swachh Virasat/Project Team

REFERENCES:

a. https://www.patrika.com/lucknow-news/swachh-virasat-campaign-in-up-from-january-14-to-24-heritage-sites-7978669/

b. https://economictimes.indiatimes.com/topic/swachh-virasat

c. https://www.hindustantimes.com/cities/lucknow-news/swachh-virasat-abhiyan-kite-festival-kicks-off-10-day-drive-to-preserve-lucknow-monuments-101673723763643.html

d. https://www.livehindustan.com/uttar-pradesh/sultanpur/story-swachh-virasat-abhiyan-under-swachh-bharat-mission-7678917.html

Ms. Neha Sharma, IAS, Director, Urban Development, Government of Uttar Pradesh, receiving the award from Shri Manoj Joshi, IAS, Secretary, Ministry of Housing and Urban Affairs, Government of India.

CONTACT INFORMATION

Title of the Best Practice	:	Swachh Virasat
Location of the Best Practice	:	Various cities in the State of Uttar Pradesh
Name of the Winner (Applicant Agency)	:	Swachh Bharat Mission (U), Urban Development Department, Govt. of Uttar Pradesh
Address	:	Directorate Urban Local Bodies, Uttar Pradesh Lucknow- 226010, Uttar Pradesh
Contact Person	:	Directorate, Urban Development Department, UP
Email	:	sbmslbup@gmail.com

* * * * * * *

Effective Waste Handling, Segregation, Processing, Recycling & Scientific Landfills

Swachh Bharat Mission, Directorate of Town Panchayat (Tamil Nadu)

The project focuses on practices and approaches that are critical for long-term waste management and environmental conservation. The project's initiative of waste segregation at the source, methods to increase the efficiency of manure through separate waste processing, and various methodologies to add value to waste, promoting the concept of "waste to wealth." The initiative is sustainable because waste recycling is critical in decreasing waste's environmental impact, preserving resources, and promoting a circular economy.

BACKGROUND

Processing is done differently for different categories of waste. At Karunguzhi RR park segregating waste is done at source, processed waste is segregated fractions, recover resources and recycle to the maximum extent and minimize landfilling to 20% or less (including reject materials/debris coming out of processing). With successful implement of this model we also provide various training sessions on "Effective Waste Handling" to other Urban Local Bodies (ULB's) in and around Tamilnadu. The percentage of scientific disposal of wet and dry waste is increased compared to the previous records of the ULB, that too achieved with a minimal cost and manpower.

ESTABLISHMENT OF PRIORITIES

Segregated Plastic wastes are recycled to produce oil by using Pyrolysis Plant installed at RR Park. Whereas bags, shoes and chapels are sent to refurbishment units. Mixed Waste are segregated as Kitchen waste, flower waste, citric fruit waste eggshells, tea waste, and are processed separately using different methods.

1. Kitchen waste to windrow platforms for composting.
2. Flower waste to flower powder for Rangoli colors.
3. Citric fruit waste to washing powder for brass/copper vessel washing purpose.
4. Egg shells to calcium powder for plants.
5. Segregating, reduces the total waste quantity and a stabilized income can also have generated through this recovery.
6. C & D Waste are disposed through tipper lorry to a low level area for dumping.

Processing and recycling of all segregated fractions of Solid Waste. To reduce the Plastic waste being dumped, to ensure 100% waste processing and scientific disposal of them. Scientific disposal includes safe and quantified disposal of inert waste and processing rejects to scientific Landfills. Different type of Effective Microbes Solution prepared in our RR Park

PROCESS

Method 1:

Mixture of Cow Dung, Jaggry, and Water in 20:1:50 ratios for 1 ton wet waste collected from households. Keep this mixture in barrel for 21 days to get fermented well after that we can use this by sprinkling on wet waste.

Segregation at Resource Recovery Park

Method 2:

Mixture of Jaggry and cooked rice in 1:1 ratio and keep this closed pot underground for 20 days to get fermented well, after that we can use this by 10ml for 10Lits water and sprinkling on the wet waste.

Method 3:

For more effective compost: Isopyrazam, Pseudomonas, Phosphobacteria, Trichoderma, Jaggry, Curd, Cow urine, and Cow dung mix together and keep it for 60 days for fermentation. The fermented solution is used for compost the waste quickly and gives more effective to the wet waste.

Conveyor Table

Whereas the segregated dry waste like waste bags, shoes and chapels are collected, refurbished and sold to public who can't afford new ones, Tire and other plastic waste were cleaned and converted into attractive Toys and kept for demonstration inside the RR Park.

There was no proper collection mechanism, and the waste generated from households are sometimes litter in sewage lines causing stagnation thereby leading to public health issues in the community. Collected mixed waste including flower waste, citric fruit waste eggshells are difficult to compost along with the kitchen waste, also it reduces the compost quality. Creating awareness to the public about the importance of segregation of waste at the source, and the ill effects of littering. Mixed wastes are processed separately to increase the efficiency of the manure and different methodologies are derived to add the values of waste (Waste to wealth).

Preparation of route chart ward wise with complete details such as collection route, vehicle number, collection timing, collection worker's name and contact details, start and end points.

Practices followed for processing mixed waste after segregation

1. Citric fruits skin collected from different juice shops are dried in shadow place and given this to the grinding machine to powder it for vessel washing purpose.
2. Flowers waste collected from flower market and temple. The collected waste dried and powdered in compost yard. After that Powders are packed in different packs for the purpose of rangoli and holi.
3. Egg shells collected separately, powdered and packed to sell the households for gardening purpose.

Pyrolysis

The facilities enhance the efficiency of effective solid waste management and ensure the dumping of unprocessed waste is eradicated post-deployment. Implementing this method of processing different types of waste separately reduces the wet waste quantity and encourage it for organic use.

Challenges faced

1. Segregation at source level is initially difficult due to high content of mixed waste, scientific disposal for individual waste is required.
2. Wet waste composting takes long duration, which in practice the composting time period reduced from 60 days to 21 days by adding different type of Effective Microbes Solutions.

3. Initially the Installation of Pyrolysis Plant is expensive and tedious process with proper technical guidance we overcome this.
4. There was no proper collection mechanism, and the waste generated from households are sometimes litter in sewage lines causing stagnation thereby leading to public health issues in the community.
5. Collected mixed waste including flower waste, citric fruit waste eggshells are difficult tocompost along with the kitchen waste, also it reduces the compost quality.

SUSTAINABILITY

- Creating awareness to the public about the importance of segregation of waste at the source, and the ill effects of littering.
- Mixed wastes are processed separately to increase the efficiency of the manure and different methodologies are derived to add the values of waste (Waste to wealth).
- Preparation of route chart ward wise with complete details such as collection route,
- vehicle number, collection timing, collection worker's name and contact details, start and end points.

RESULTS ACHIEVED

1. The facilities enhance the efficiency of effective solid waste management and ensure the dumping of unprocessed waste is eradicated post-deployment.
2. Implementing this method of processing different types of waste separately reduces the wet waste quantity and encourage it for organic use.
3. The remedial action taken by the authorities at the appropriate time gives the way for clean, hygiene and healthy lifestyle for the entire population of the Urban Local body.
4. These steps implemented are cost effective and creates a way to get income for self-help group organizations and sanitary workers.

TRANSFERABILITY

1. The government is trying to optimize investments and a cluster approach to cover all ULBs has been adopted.
2. ULB's have been clustered assuming travel distance of 10 km.
3. Also most of the ULBs have solid waste management facility and the same solution can be possibly scaled up.

Windrow Composting

Herbal Garden at Resource Recovery Park

Shri Manoj Joshi, IAS, Secretary, Ministry of Housing and Urban Affairs, Government of India, presenting the Award to the funtionaries / officials of the Karunguzhi Town Panchayat.

CONTACT INFORMATION

Title of the Best Practice	:	Effective Waste Handling–Segregation, Processing, Recycling & Scientific Landfills
Location of the Best Practice	:	Karunguzhi, Chengalpattu (Tamil Nadu) PIN: 603 303
Name of the Winner (Applicant Agency)	:	Swachh Bharat Mission, Directorate of Town Panchayat, Tamil Nadu
Address	:	City Municipal Council, Karwar, Karnataka
Contact Person	:	Commissioner, City Municipal Council, Karwar
Email	:	cglkarunguzhi@gmail.com
Website	:	dtp.tn@nic.in

* * * * * * *

Adaptive Reuse of Old Abandoned Heritage While Reviving Traditional Materials and Practices of Construction by Capacity Building (Focusing on Conscious and Sustainable Approaches)

Studio Mandala, Dehradun, Uttarakhand.

The architect has made informed decision about incorporating traditional elements into this restoration project by carefully assessing the benefits and constraints. Traditional materials and construction practices have contributed to preserve a house by keeping its historical significance, fostering sustainability, and building a connection to local culture and traditions.

BACKGROUND

a. Restoration of an almost 250-300 year old structure and putting it to an adaptive reuse as a dining place so more and more people can understand the value of heritage and how it can be put to reuse in the present times. The place is being highly appreciated by the people of the city.

b. The Journey from an abandoned ruin of "Agu Lakshay" flourishing with vegetation to a restored *Mitho,* filled with art and grace entailed experiencing the past in present. Beginning with understanding the extent of deterioration, putting foundations beneath existing walls, procuring the traditional materials of Brick, Lime and Surkhi to experimentation and preparation of traditional recipes for various mortars each of the team members i.e the owners along with the architect and various craftsmen (masons, carpenters, electrician, plumbers and labourers) breathed life into this otherwise dying structure of the 18th-19th Centuary. Every old brick, stone and wooden beam found in the structure was put to reuse to retain the essence of time it has witnessed.

c. Published Book "DEHRADOON AN ILLUSTRATED JOURNEY OF A CITY" which is helping in building knowledge on architecture and heritage in the city

KEY DATES

Dates	Significance/Achievement
15th April 2019	Awarded INTACH Research Scholarship for Documentation of Architectural Heritage of Dehradun
1st June 2022- 31st March 2023	Invited to be the International Correspondent from India by ACCU Nara, Japan
8th October 2019	Restoration of a 250-300 year old abandoned Ruin started
12th September 2021	Publication of the book "DEHRADOON An Illustrated Journey of a City" by Copal Publishing
8th October 2022	Completion of the Restoration and launch of the restored site as MITHO Thakali An Authentic Dining Place serving Himalayan cuisine
6th November 2022	Selected for " Creative and Innovative Architecture, Heritage Conservation and Interior Design Firm of the Year 2023" under the "Sustainable Design Approach"by Begin Up Architecture and Interior Design Awards National Edition 2023.

ESTABLISHMENT OF PRIORITIES

The establishment of priorities depends on project to project basis. However the focus is always on reduce, reuse and recycle. Owner of the projects requested to employ skilled masons/workers for various processes instead of big contractors and do capacity building while making them understand the properties of materials and how we can reduce use of cementitious materials in the process. The priorities are summarised below:

- Identification of heritage structures in the city and document them as per the architectural development of the city and create knowledge about the heritage of the city and its surroundings as they are threatened by unscientific and insensitive developmental activity.
- Restoration of the identified structure and putting them to an adaptive reuse if the owner agrees.
- Use of traditional materials and techniques in the restoration process while capacity building to revive. the sustainable approaches used in the traditional construction.

PROCESS

Beginning with Documentation, condition assessment and understanding the extent of deterioration, structural retrofitting, restoration (putting foundations beneath existing walls, procuring the traditional materials of Brick, Lime and Surkhi to experimentation and preparation of traditional recipes for various mortars each of the team members i.e the owners along with the architect and various craftsmen (masons, carpenters, electrician, plumbers and labourers) breathe life into otherwise dying structures of the 18th-19th Cen. Every old brick, stone and wooden beam found in the structure is put to reuse to retain the essence of time it has witnessed.

MOBILISATION OF RESOURCES

The Architectural Design, aesthetics and capacity building for various processes is done with different service providers being engaged for accomplishment of various processes. While the final touches are added by the owners themself to add to space the essence of their beliefs and customs.

Views of the structure after completion of project

RESULT ACHIEVED

- Publication of a book on "The Architectural And Natural Heritage Of Dehradun" following an 18 month long intensive research funded by INTACH Heritage Academy 2019-2020 to Document the Architectural Heritage of Dehradun, awarded to Ar. Mauli shree Mishra, the founder and Principal architect of Studio MANDALA. The publication of the book by Copal Publishing was important to bring out to people that how the city is transforming at an allarming rate and why it is important to identify our city's heritage which comprises of different historical layers. forests , rivers, canals and at the same time try to conserve it and bring it under use as it forms the identity of the city and acts like a connection to peoples memories.
- An abandoned old structure was brought back to life, and not only brought back to life but revived with all the traditional beauty and functionality, so much that people are loving the material rawness and color of the chuna and surkhi used in the process and as final finish

- It has inspired more people to come forward to restore their old ancestral properties and flaunt their beauty in the current times of identity-less box structures
- In the long run the heritage and identity of the city can be saved by people's Will and Participation.
- At the cluster level, a beautiful photogenic structure, interactive with the street and surroundings now stands in place of a falling ruin.

Use of traditional building materials

SUSTAINABILITY

1. Financial – The cost spent in the restoration is almost half of what it might have costed to demolish the existing ruin and build a similar sized new structure. As the restored structure is adaptively reused as a Theme Dining space its structure and spaces are a centre of attraction for the people of the city as it gives a very soulful and nature filled environment.
2. Social and Economic – The abandoned and old properties which are either acting as dump yards, or places of uncivilised activities are brought back to the context with positivity of life and activity and generate income for the stakeholder involved
3. Cultural – The process helps in saving some of the historical identity of the context as well as the city as these old structures are like landmarks for a city and deeply connected with memories of local communities and people.
4. Environmental – Use of natural materials like lime, mud, jute, haritaki, bel fruit etc. instead of cementitious materials , no use of artificial or synthetic paints which are plastic based and harmful for the planet in the long time .

TRANSFERABILTY

There are thousands of structures from the same time period , earlier or later time periods lying abandoned, the work tries to create an example so the method or practices can be replicated and adopted and the heritage of the city can be saved on the larger level while connecting the people to their roots and taking responsibility and their city. A lot of inspiration from traditional Indian architecture has been taken as well as for addition of brick jail walls etc. inspiration from Mr. Laurie Baker's work has been taken.

LESSON LEARNED

A view of the old dilapidated structure

As heritage conservation and settlement experts it is always taught to respect and understand the old structures, over the years it is this understanding developed by observing old and new structures and how materials have an impact on spaces as well as our bodies that has been a constant inspiration for our work. Our long association with Leh old Town Initiative has been a great pathway to understand how context can be restored with the involvement of the community. A major hurdle in all such projects is that the knowledge of traditional materials and methods is mostly missing in the workman and capacity building for same is a long process, also the workman available are many a times unskilled and it is very difficult to make them understand the process. Secondly the owners often have too many aspirations but with old structures there are also certain constraints to keep them structurally safe.

RERERENCES

1. https://www.thebetterindia.com/306970/inspired-by-mom-entrepreneur-opens-nepali-restaurant-in-uttarakhand-mitho-thakali/
2. Video link : https://www.youtube.com/watch?v=qV_Ma5XSd-E

Old Dilapidated Structure before implementation of the project

Structure after implementation of the project

Ms. Ar. Mauli Shree Mishra, receiving the award from Shri Manoj Joshi, IAS, Secretary, Ministry of Housing and Urban Affairs, Government of India.

CONTACT INFORMATION

Title of the Best Practice	:	Adaptive Reuse of Old Abandoned Heritage while reviving traditional materials and practices of construction by capacity building (focusing on Conscious and Sustainable Approaches)
Location of the Best Practice	:	Old Rajpur, Dehradun (Uttarakhand)
Name of the Winner (Applicant Agency)	:	Studio MANDALA (Artefacts and Habitats Sustainable Solutions LLP)
Address	:	158/28/3, Doon Vihar, Jakhan , Rajpur Road Dehradun-248001 (Uttarakhand)
Contact Person	:	Ar. Mauli Shree Mishra
Email	:	imagine_mandala@gmail.com
Website	:	https://www.instagram.com/imagine_studio_mandala/

* * * * * * *

भवन निर्माण सहित, आत्मनिर्भर एवं सतत् शहरी विकास

हमारे देश में आवास एवं इंफ्रास्ट्रक्चर विकास के क्षेत्र में, हाउसिंग एंड अर्बन डेवलपमेंट कॉर्पोरेशन लिमिटेड (हडको), भारत का प्रमुख तकनीकी – वित्तीय सार्वजनिक क्षेत्र का उद्यम है।

- हडको 53 वर्षों से राष्ट्र सेवा में समर्पित।
- भारत में, हडको भारत सरकार की वित्तपोषण शहरी आवास एवं इंफ्रास्ट्रक्चर परियोजनाओं का एक तकनीकी वित्तीय मिनी रत्ना सार्वजनिक क्षेत्र का उद्यम है।
- हडको "सामाजिक न्याय के साथ लाभप्रदत्ता" के अपने लक्ष्य के साथ आर्थिक रूप से कमजोर वर्ग तथा निम्न आय वर्ग के लिए परियोजनाओं पर विशेष बल देता है।

सबके लिए मकान

शहरी विकास

इंफ्रास्ट्रक्चर

परामर्शी सेवाएं

भवन प्रौद्योगिकियाँ

सीएसआर पहलें

हाउसिंग एंड अर्बन डेवलपमेंट कॉर्पोरेशन लिमिटेड
(भारत सरकार का उपक्रम)
पंजीकृत कार्यालय: हडको भवन, कोर–7ए, भारत पर्यावास केन्द्र, लोधी रोड, नई दिल्ली–110 003

CIN: L74899DL1970GOI005276
GSTIN: 07AAACH0632A1ZF
वेबसाइट: www.hudco.org.in
अनुसरण माध्यम:

Design and Printed by: **VIBA Press Pvt. Ltd.** - 9810049515

Building Inclusive, Self Sufficient & Sustainable Urban Development

Housing and Urban Development Corporation Ltd. (HUDCO) is India's premier techno-financing public sector enterprise, in the field of housing and infrastructure development in our country.

- Celebrating 53 years of dedicated service to the nation
- A techno financial Mini Ratna PSE of the Government of India financing urban housing and infrastructure projects in India
- With its motto of "Profitability with Social Justice" HUDCO lays emphasis on projects for the economically weaker sections as well as Low Income Groups

Housing for All

Urban Development

Infrastructure

Consultancy Services

Building Technologies

CSR Initiatives

Housing and Urban Development Corporation Ltd.
(A Govt. of India Enterprise)
Registered Office : HUDCO Bhawan, Core-7A, India Habitat Centre, Lodhi Road, New Delhi-110 003

CIN: L74899DL1970GOI005276
GSTIN: 07AAACH0632A1ZF
Website: www.hudco.org.in
Follow us on: