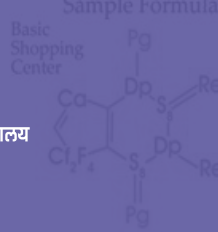




School of Planning
and Architecture
New Delhi

An Institution of National Importance
under an Act of Parliament
(Ministry of HRD, Govt. of India)

योजना तथा
वास्तुकला विद्यालय
नई दिल्ली



Volume 21, Number 3-4
July-December 2017

SPACE

ISSN 0970-0706

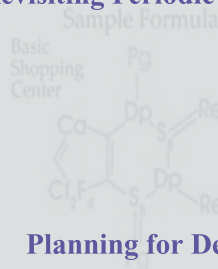
The SPA Journal of Planning and Architecture

Editorial
Mahavir



Revisiting Periodic Table: from Chemistry to City Planning

Riya Gupta, Mahavir



Vulnerability in Informal Settlements

Yassna Gautam

Planning for Decentralized Solid Waste Management in Metropolitan Cities

Vikas Verma

Development First - from TOD to DOT

Priyanka Kumar

www.spa.ac.in



SPACE

THE SPA JOURNAL OF PLANNING AND ARCHITECTURE

Vol. 21, No. 3-4, July - December 2017

SPACE, the quarterly Journal of SPA, seeks to publish critical scholarly papers in the fields of planning, architecture and design. In planning, SPACE will give preference to papers on urban and regional studies, transport planning, environmental planning, housing and habitat studies, infrastructure planning, and papers on any other aspect of planning such as urban management. Paper writers from the fields of architecture and urban design should focus on the broad areas of architectural conservation, landscape architecture, urban design and industrial design. Papers will be also accepted from the fields of building engineering and management and real estate management.

EDITORIAL BOARD

Prof. Chetan Vaidya, Director	Chairperson
Prof. Dr. Mahavir, Professor of Planning	Editor
Prof. Dr. Jaya Kumar, Professor of Architecture	Member
Prof. Dr. Sanjay Gupta, Professor of Transport Planning	Member
Ms. Anuradha Chaturvedi, Associate Professor of Architectural Conservation	Member
Dr. Shweta Manchanda, Associate Professor of Architecture	Member
Dr. Neha G. Tripathi, Assistant Professor of Environmental Planning	Member

Contributors wishing to send in their papers for publication in SPACE may send their manuscripts for review and consideration to the Editor. Two hard copies of the paper and one page abstract may be sent along with a soft copy in MS Word format. Papers without a soft copy will not be accepted for publication in SPACE. Papers will be also accepted by E-mail, if accompanied by author's electronic signatures. All communications regarding SPACE should be addressed to the Editor at the following address.

Prof. Dr. Mahavir
Editor, SPACE
School of Planning and Architecture
4 Block-B, I. P. Estate, New Delhi - 110002, India
E-mail: mahavir57@yahoo.com
Fax: 011-2370-2383
Phone: 011-2370-2395; 011-2335-0879; 011-2370-2381; 011-2370-2384

ANNUAL SUBSCRIPTIONS FOR TWO CONSECUTIVE ISSUES

Inland: ₹ 500 for institutions, ₹ 150 for individuals, and ₹ 100 for students on production of authentic identity. For all categories, ₹ 25 will be charged for postage. Foreign US\$ 100 plus \$ 10 for postage by sea mail.

PUBLICATION OF ADVERTISEMENTS

SPACE will accept a limited number of advertisements for each issue from renowned publishing firms, academic and professional institutions on publications, announcements, notices or posters on academic programmes, conferences, competition projects and other academic and professional activities related to architecture, planning and allied disciplines. The following rates will apply with 25 percent discount for academic institutions.

Inside half page: ₹ 2,000; Inside full page: ₹ 3,000; special page: Negotiable

All payments should be made in advance through bank draft in favour of School of Planning and Architecture payable at New Delhi.



CONTENTS

Editorial	iii
Mahavir	
Revisiting Periodic Table: From Chemistry to City Planning	1
<i>Riya Gupta, Mahavir</i>	
Vulnerability in Informal Settlements	60
<i>Yassna Gautam</i>	
Planning for Decentralized Solid Waste Management in Metropolitan Cities	77
<i>Vikas Verma</i>	
Development First - from TOD to DOT	91
<i>Priyanka Kumar</i>	



REVISITING PERIODIC TABLE: FROM CHEMISTRY TO CITY PLANNING¹

Riya Gupta

Physical Planner

Student, M. Tech., IIRS, ISRO, Dehradun 248001

gupta.riya.112357@gmail.com

Mahavir

Professor of Planning

Dean (Academic)

School of Planning and Architecture, New Delhi 110002

mahavir57@yahoo.com

ABSTRACT

The Indian Planning Model follows Euclidean Zoning, thus obliging one to travel incessantly amongst the 'zones', much exacerbated by the effort for integrated planning, by building off of land uses for the sake of 'permissibility' of land premises. A way out can be sought, by quantifying the permissibility evaluations, that are otherwise discretionary today, depending upon land use compatibility, settlement size and function, etc. For this, Moseley's Periodic Table (a significant topic in the field of Chemistry) is being stressed upon, owing to its precepts and features, those can pave a way for a similar table, for the purpose of ease of City Planning, taking in parameters that are important in terms of operation, optimality, and organization of the envisioned table. The shape of the table, and the relevant speculations, owing to the overlapping nature of land uses and the permissibility involved, unlike the clear-cut paradigm of dissimilarity in case of chemistry table, are also highlighted. The study goes on getting finer by considering various significant details such as the symbiotic relationship between the inference of Multiplier (the ratio between the population sizes of two settlements of different orders) Coefficient on the basis of the distribution of the citizens throughout the area, in the form of a series of formulae, that on

¹ Based on the thesis titled "Periodic Table as a Basis for Quantifying the Assessment of Land Use Compatibility in an Urban Context", submitted by Riya Gupta, as partial fulfilment of the requirement for the award of Bachelor's Degree in Planning, from School of Planning and Architecture, New Delhi, under the supervision of Prof. Dr. Mahavir.



VULNERABILITY IN INFORMAL SETTLEMENTS

Yassna Gautam

Bachelor of Planning, Master of Planning (Urban Planning)
yassnagautam93@gmail.com

ABSTRACT

Vulnerability is usually defined as the extent to which a community, structures, services, or geographic area is likely to be damaged or disrupted by the impact of particular hazard, on account of their nature, construction and proximity to hazardous terrain or a disaster prone area. It refers to the inability (of a system or a unit) to withstand the effects and impact of a hostile environment. The conditions determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards. It is the social, cultural, economic and political environment that makes people vulnerable. This is most apparent in the economic pressures that force many of the poor to live in cheap but dangerous locations such as flood plains and unstable hillsides; but there are many less visible underlying factors - social, political and economic - that affect people's ability to protect themselves against disasters or to recover from them.

This paper attempts to illustrate the type of vulnerabilities faced by the informal settlement across various types of landforms and understand their causes. The paper focuses on building a framework in order to acquaint the reader about the vulnerabilities and the strategies which can be adopted to make the community resilient through a variety of case studies and literature study.

Keywords: *vulnerability, resilience, informal settlements, hazard, disaster*

INTRODUCTION

“Communities will always face natural hazards which are beyond human control, but disasters of today are often generated by, or at least exacerbated by, human activities. At no time in human history have so many people lived in cities clustered around seismically active and vulnerable areas. Destitution and demographic pressure have led more number of people than ever before to live in flood plains or in areas prone to landslides and other disaster risk areas. Poor land-use planning; environmental management; and a lack of



PLANNING FOR DECENTRALIZED SOLID WASTE MANAGEMENT IN METROPOLITAN CITIES

Vikas Verma

Masters in Planning (Specialization in Urban Planning)

vikasvrma1992@gmail.com

ABSTRACT

In previous times, the disposal of human wastes and various other wastes did not represent a major issue because the population size was small and the measure of land availability for digestion of wastes was huge. But the continuous increment and diversified wastes caused from the rapid economic growth and overpopulation in most of the metropolitan cities which made solid waste management as one of the major concern of government. It has also been noticed that solid waste management is critical service for ULBs since numerous general medical problems are associated with it. The scenario is especially bad in slums and unauthorized settlements in urban areas where role of Municipality/ Municipal Corporation is practically missing. Deficiency in waste management/ disposal may cause extreme health and environmental issues. These issues might be ascribed due to the incomplete segregation of recyclable waste at source, incomplete door to door collection, inaccessibility of reasonable infrastructure for the treatment and disposal of enormous amount of waste generated. In order to address these difficulties the research paper advocates decentralized solid waste management to limit the issues related to solid waste management in metropolitan cities. The primary reason for this paper is to provide a complete view of the decentralized system to deal with solid waste management along with proper and suitable technologies to tackle the issues of processing and treatment of waste. The research paper also comprises the real solutions and proposes significant opportunities. The concept of 3Rs need to be rethought and 6Rs need to come in place- Refuse, Reduce, Reuse, Replenish, Recharge and Recycle.

Keywords: *legal framework, source segregation, door-to-door waste collection, waste recycling, minimization of waste, Zero Waste concept.*



DEVELOPMENT FIRST - from TOD to DOT

Priyanka Kumar

Architect-Urban Planner, Regional Centre for Urban & Environmental Studies, Lucknow

(Established by the Ministry of Housing and Urban Affairs, Government of India)

priyanka.kumar275@gmail.com

ABSTRACT

Land-use development and transportation both are inter-linked with each other and make different types of urban forms. Globally, there are many cities whose forms were shaped by transportation and land use. However, there is neither a systematic approach nor empirical method to understand which kinds of transportation factor should connect land use and which kinds of land-use factor should connect transportation. There are distinct schools of thought - either development should be oriented to transit or transit should orient to development. Therefore, this paper aims at reviewing whether development should come first or transit. Finally, this paper argues in favour of Development Oriented Transit (DOT).

Keywords: *Transit Oriented Development (TOD), Development Oriented Transit (DOT), Transit, Land use*

INTRODUCTION

Land use and transportation both are connected with each other. Transport is the most essential component for shaping development of a city. Land use is one of the prime determinants of movement and activity which means land use determines the demand for transport. Land use may change because of increase or decrease in accessibility. Integration of land-use and transit is very essential. National Urban Transport Policy (NUTP) also emphasizes on integrated land use and transport planning.

Types of Development with Relation to Transit

The integration of land-use and transit may carry out in many ways such as Transit Adjacent Development (TAD), Transit Joint Development (TJD), Transit Supportive Development (TSD) or Transit Oriented Development (TOD) and Development Oriented Transit (DOT).