Rejuvenation of the Tile Jamal Pure Runnel, Bhopal

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Abstract—
Almost 1 billion people, or 32 per cent of the world’s urban population, live in slums and India being one of the fastest developing countries with migration in many of the metropolitan cities, slums are considered to be the major issue within many urban areas; particularly problems related to transportation, population, health and safety.

Bhopal, the capital of state of Madhya Pradesh has widespread poverty due to its tragic past of gas tragedy. This poverty has manifested into widespread slum proliferation which has concentrated into disadvantaged land parcels generally owned by governmental bodies.

Tila Jamal Pura nalah, flowing through heart of Bhopal, has become the centre of informal activities, giving rise to slum colonies due to little attention from government. The flow of untreated sewage and septic tank overflow from nearby colonies due to absence of proper sewage system has made these natural drainage paths hub to filth and disease centers.

Along with the above mention points, due to flood prone nature of these drainage lines, the Town and Country Planning Organization, M.P., has mandated that a buffer of 15 Meter along the drainage line should be maintained.

The paper examines the case of slums and colonies located along the Tila Jamal Pura Nala located in the ward 11 and 12 of Bhopal. It calculates the approximate amount of household living in the 15 M buffer zones and suggests how the development of this buffer zone into urban green space can not only provide relief to the slum dwellers, but also provide breathing and recreational space to the resident of cities where local parks are few and far in between.

Index Terms— slums, runnel (key words)

I. INTRODUCTION

Almost 1 billion people of the world’s urban population lives in slum, the majority of them in the developing world and the locus of poverty are moving to the cities (UN Habitat, 2003).

India being one of the fastest developing countries with huge rural to urban migration, slums are considered to be the major issue within many urban areas; particularly in terms of problems related to transportation, population, health and safety.

Bhopal, Capital of state of Madhya Pradesh, India is home to 1.2 Million people. The city has experience rapid growth and received special attention from state government for being home of large government employees. Despite these factors, slum proliferation continues to be a major problem, with almost 30% of population living in miserable condition.
Jain et al., (2011) argues that the biological functions of human beings demands that he should breathe fresh air, enjoy leisure and take part in recreation but due to rapid urbanization and the mounting pressure on land, colonies and slums have been developed around runnals which faces risk due to the floods occurring as well as health problems due to the fact that the runnel usually acts as the drainage system.

II. OBJECTIVE

The objective of this paper is to introduce the area of Tila Jamal Pura Runnel flowing through ward 11, Bhopal, M.P. and develop concept proposal for the stretch for it to act as a recreational strip which can solve problem arising out of unhygienic conditions created by uncontrolled flow of sewage. All the analysis is based on primary survey and statistical data collected from offices of Rajiv Awas Yojana and Census. The proposals are based on authors’ perception of the area.

III. INTRODUCTION TO THE AREA

The paper proposes the development of stretch of Tila Jamal Pura runnel starting from the Lendhia talab in the adjacent ward. The access to this runnel is provided by Regiment road on the right and Berasia road on the left. Besides, there are certain very narrow pathways which provide access to houses along runnel. These pathways are very narrow, generally of width less than 3 Meter.

The total runnel area considered for development is 3.879 hectares and the site is surrounded by four slums- Krishna colony (3.74 Hectares), Tila Jamal Pura Gaon (3.70 Hectares), Basod Basti (3.08 Hectares) and Shobharam Ki Bawdi (1.09 Hectares). (Fig. 1)

The tenure status of the slums are different from each other, Basod Basti and Krishna Colony having Patta- a legal document issued by the state government in the name of the actual owner of a particular plot of land. (Krishnan, 2013) and Certified occupancy rights- a document issued by a local government agency or building department certifying a building’s compliance indicating it to be in a condition suitable for occupancy (Lehman and Phelps, 2005) whereas Tila Jamal Pura Gaon and Shobharam ki Bawdi residents possessing no documents of any kind.
The contour along the runnel is very steep indicating that human habitation is at a high risk along its length, but squatter settlement persists some in a very dangerous location due to poor land management practiced by the local government.

The existing cross section of the runnel is shown below. In the Section X-X’, it is seen that the runnel is wide and shallow and houses are located even at the slope. In the Section Y-Y’, the slope is steep and so the runnel is narrow and deep. The sections are tentative in nature. (Fig 2.)

DESIGN PROPOSALS

IV. The Town and Country Planning Organisation, Madhya Pradesh has mandated that a 15 Metre buffer zone to be kept along the runnel for the safety of the people and their health. If the 15 meter buffer zone is acquired then it can be used to develop the site as a breathing space for the residents by providing environmental friendly landscape. But by doing so the households residing in the 15 meter buffer zone needs to be relocated which by Rajiv Awas Yojna (RAY) was found to be 313 households. (Fig 3., Tab 1.)

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>AREA WITHIN THE BUFFER ZONE</th>
<th>DENSITY OF THE AREA</th>
<th>HOUSES TO BE RELOCATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>BASOD BASTI</td>
<td>2500 Sq m</td>
<td>0.1537 Sq m</td>
<td>76</td>
</tr>
<tr>
<td>KRISHNA COLONY</td>
<td>1500 Sq m</td>
<td>0.1585 Sq m</td>
<td>47</td>
</tr>
<tr>
<td>TILA JAMAL PURA GAON</td>
<td>3500 Sq m</td>
<td>0.2211 Sq m</td>
<td>154</td>
</tr>
<tr>
<td>OTHER</td>
<td>6000 Sq m</td>
<td>0.052 Sq m</td>
<td>36</td>
</tr>
</tbody>
</table>

The space freed by relocating these households can be used as an active recreation zone along with the informal commercial spaces such as those for vendor activity. But for doing so, the foul smell of the runnel is to be eliminated which in turn can be done by the introduction of reed beds- 

Phragmites Australis (Vipat, et al. 2008). The reed beds which are also addressed as Constructed Wetlands will also help in purifying the water of the runnel.

The Use of reeds beds is very beneficial as:

- It is a cost-saving, effective, low-maintenance approach to dewatering sludge and reducing bio-solids.
The plants facilitate the growth of bacteria colonies and other microorganism.

It is an ecosystem based approach.

It does not have odour problem

Construction consumes very less energy and is eco-friendly.

The mechanism of a typical reed bed is shown in Fig 4.

The stretch is divided into two zones—the vendor zone and the park zone. The vendor zone will serve as major shopping hub for the nearby surrounding areas. In addition to it, it will provide an organized solution to all the residents as well as combines all scattered shopping areas into one zone. (Fig 5.)

The other zone is the park zone and this area will serve as a breathing space for the surrounding residential areas. Absence of any major park and green areas justifies its location. And it will also play a role in adding to the overall aesthetics of the site.

CONCLUSION

Demand for urban spaces will grow with the passage of time, which is likely to result in encroachment of open spaces. Hence there is an urgent need to develop green breathing spaces in between high density areas thereby providing healthy environment to urban dwellers.(Jain, et all, 2011). This proposal tries to bring about a healthy environment and a sense of community spaces to the densely populated residential area nearby the Tila Jamal Pura runnel along Ward 11.

REFERENCES


