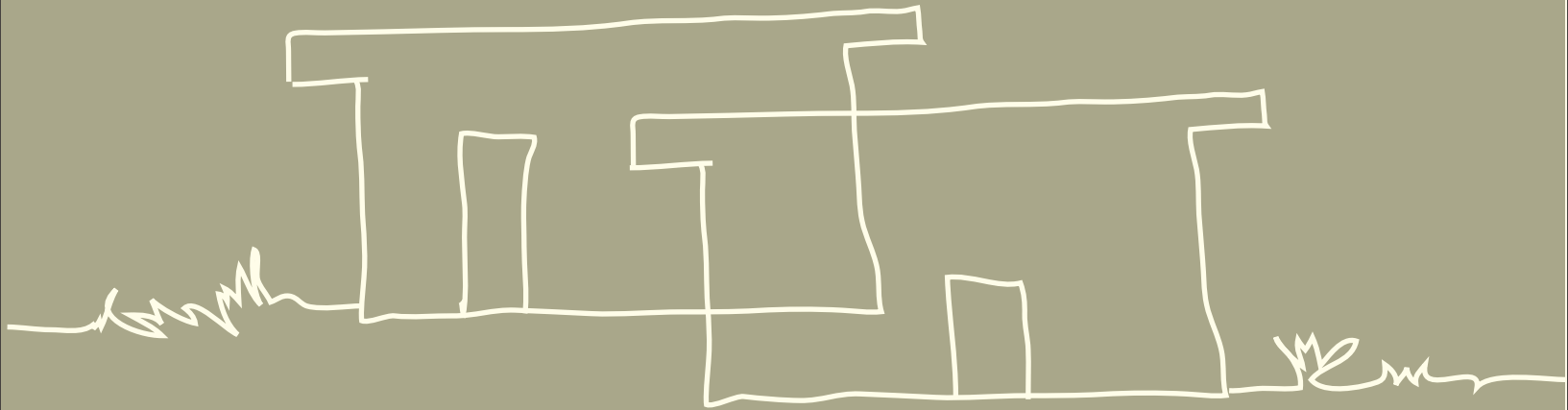




## land & property

- 01 Zoning and land use conversions
- 01 Building violations & land encroachment
- 01 Civic amenity sities
- 01 Heritage site preservation
- 01 Slums
- 01 Visual pollution

**01**

# zoning & land use conversions



ZONING REGULATIONS

One of the most important functions of a City Planning Department is defining the zoning and land use regulations for the city that ensures a planned growth and development.

- In defining the zoning and land use, many considerations are involved:
- Seamless integration of multiple housing types that encourages a healthy mix of economic and social backgrounds
  - Commercial areas that provide neighbourhood economic growth and job opportunities
  - Essential services such as shops, post offices, schools, hospitals, etc.
  - Recreational spaces such as parks and playgrounds
  - Well planned road circulation and connections, and carefully designed junctions

Zoning also defines the vertical growth in the different parts of the city, encouraging multiple storeys in certain areas and restricting it in others. Ultimately, a city’s economic and development success, or lack of it, is dictated in large measure by the quality of it’s planning and enforcement of it’s regulations.

What is zoning?

A city is normally divided into nine zones as described by the Karnataka Town and Country Planning Act 1961, depending on the use of the land – Residential, commercial, industrial, public and semi-public, utilities and services, parks and open space playgrounds, transportation and communication and green belt (agricultural land/ water sheet). Neighbourhoods can have a variety of zoning.

What is zoning regulation?

Zoning regulation specifies the uses that are permitted on land. Exemptions and revisions can be made in special cases, taking into consideration the long-time requirements of the city.

What is zoning based upon?

It is as per the Revised Comprehensive Development Plan (RCDP) approved by the Government in 1995 that covers 1279 sq. km. The RCDP is prepared by the Town Planning Department of the BDA.

Why is it necessary?

Zoning regulation ensures planned urban development. It prevents overcrowding in buildings/land and thus ensures adequate facilities. It protects the residential areas from harmful invasions of commercial and industrial uses and promotes orderly development of neighbourhoods and the city.

Where does one get the relevant information on zoning regulations?

Both the RCDP and the zoning maps are available at the BDA office for public reference. Citizens can also purchase a copy of the RDCP.

LAND USE CONVERSIONS

Introduction

Citizens often complain that properties meant for residential use are used for commercial purposes. The answers to the following questions clarify the policy regarding land use, and deal with the procedures to be followed for change in land use as provided in The Karnataka Town and Country Planning Act (KTCP Act), 1961.

What is the policy document for determining land use in any part of Bangalore?

The Revised Comprehensive Development Plan (RCDP) of 1995 prepared by the BDA is the policy document for determining land use in any part of Bangalore. Any person who wishes to change the present use of land or building to any other use of land is required to get a change in land use order in the form of a Commencement Certificate from the BDA. Certain uses of land are permissible in various land use zones of the RCDP under normal circumstances and also certain uses are permitted under special circumstances by the BDA. In such cases, change of land use is not required. But while constructing buildings for land uses which are permissible under special circumstances, a clearance from the BDA is to be obtained in the form of a Commencement Certificate. The citizens may approach the Town Planning Department of the BDA for any clarifications regarding any uses permissible under both normal and special circumstances in different land use zones.

What is the current policy for change in land use? /What is a Commencement Certificate? How can one obtain it?

The BDA may permit the change in land use only after the approval of the Urban Development Department of the State Government. The approval is given only if the changes to land use are in the interest of the public.

The procedure for change in land use is:

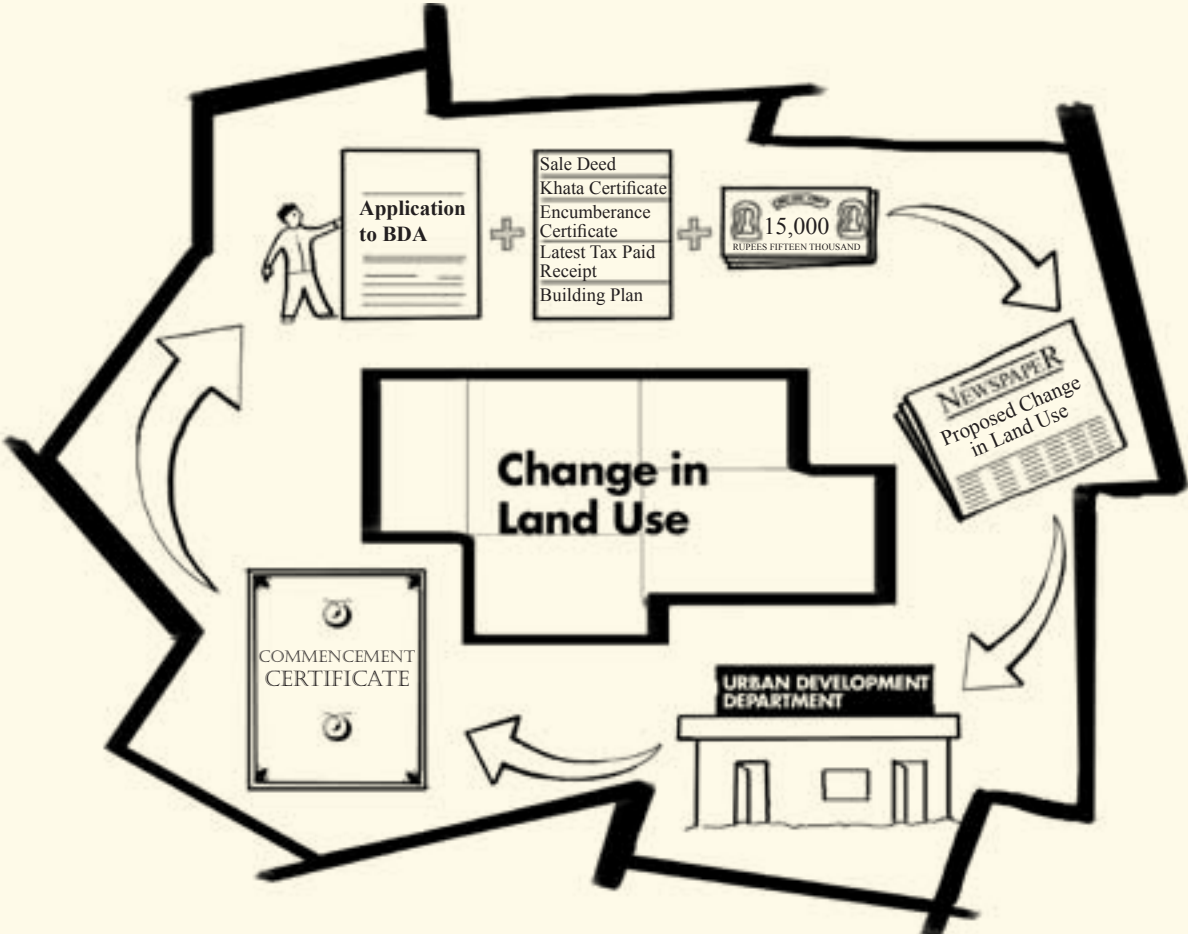
1. The owner of land seeking a change in land use, should give an application to the BDA in the prescribed form along with the following documents:-
  - Sale deed
  - Khatha certificate
  - Encumbrance certificate
  - Latest tax paid receipt
  - Building plan/location plan showing the site no., street and neighbouring developments.
2. After verification of all documents and after site inspection, the BDA intimates the applicant to remit Rs.15,000 as notification charges.
3. The BDA publishes the proposed change in land use in daily newspapers having circulation in the area, inviting any objections for such change.
4. The objections should be received within a period of 16 days from the date of publication of such notification.

- 4a. If objections are received and these objections are valid, the BDA can decline the change of land use.
- 4b. If no objections are received, the BDA will make enquiries as may be required, and submit the proposal for change in land use to the Urban Development Department of the State Government. The decision of the State Government will be final. On obtaining clearance from the State Government, the BDA will grant a Commencement Certificate.
5. In order to receive the Commencement Certificate, the owner of the land will have to pay the prescribed fees to the BDA. The BDA shall serve a notice in Form VIII by registered post to the applicant to pay the prescribed fees within 90 days from the date of receipt of such notice. The prescribed fees are given below:
- For change of land use to commercial use - Rs.75.50 per square meter
  - For change of land use to industrial use - Rs.40.50 per square meter
  - For change of land use to residential use - Rs.20.50 per square meter

The owner of the land can use the land for the changed use only after the receipt of the Commencement Certificate from the BDA.

**How long will it take to get an approval for change in land use?**

The BDA receives an average of 30 applications every month for change in land use. The BDA gives



Matching solutions to problems

|     |                                                                                                   | POSSIBLE SOLUTIONS                                |                                              |                                                                     |                                                                                  |                                                                          |                                                                              |                                      |                                                       |                                            |                                                       |                                |
|-----|---------------------------------------------------------------------------------------------------|---------------------------------------------------|----------------------------------------------|---------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------|-------------------------------------------------------|--------------------------------------------|-------------------------------------------------------|--------------------------------|
| No. | Problems                                                                                          | Require resident input for any change in land use | Assess impact of land use change on locality | Put up 30 day notice for change in land use request on the property | Change the law to give community formal role in land-use approval and monitoring | Restrict land-use to CDP guidelines unless approved by residents / Govt. | Restrictions on F.A.R. to be consistent unless approved by residents / Govt. | Enforce zoning and land use policies | Inform relevant agency of construction on public land | Take action on construction on public land | Application for Govt. land for community requirements | Regular monitoring by citizens |
|     |                                                                                                   | 1                                                 | 2                                            | 3                                                                   | 4                                                                                | 5                                                                        | 6                                                                            | 7                                    | 8                                                     | 9                                          | 10                                                    | 11                             |
| 1   | Lack of awareness of policy requirements                                                          | •                                                 |                                              |                                                                     |                                                                                  |                                                                          |                                                                              |                                      |                                                       |                                            |                                                       |                                |
| 2   | Change in land use causing undesirable living conditions                                          | •                                                 | •                                            |                                                                     |                                                                                  |                                                                          | •                                                                            | •                                    |                                                       |                                            |                                                       | •                              |
| 3   | Notifications of land use conversions not always seen by residents                                | •                                                 |                                              | •                                                                   | •                                                                                |                                                                          |                                                                              |                                      |                                                       |                                            |                                                       | •                              |
| 4   | Commercial land use in a residential area                                                         |                                                   |                                              | •                                                                   | •                                                                                | •                                                                        | •                                                                            |                                      |                                                       |                                            |                                                       | •                              |
| 5   | Lawsuit on land use conversion still in court, yet building is in use                             |                                                   |                                              | •                                                                   |                                                                                  |                                                                          |                                                                              |                                      |                                                       |                                            |                                                       | •                              |
| 6   | Residential areas with commercial buildings: noise, traffic, loss of privacy                      |                                                   | •                                            |                                                                     | •                                                                                | •                                                                        | •                                                                            | •                                    |                                                       |                                            |                                                       | •                              |
| 7   | Single-family homes replaced with multi-storey apartments violates privacy, infrastructure burden |                                                   |                                              |                                                                     |                                                                                  | •                                                                        |                                                                              | •                                    |                                                       |                                            |                                                       | •                              |
| 8   | Inadequate public spaces                                                                          |                                                   |                                              |                                                                     |                                                                                  |                                                                          |                                                                              |                                      |                                                       |                                            | •                                                     |                                |
| 9   | Public land used for unauthorized religious construction                                          |                                                   |                                              |                                                                     |                                                                                  |                                                                          |                                                                              | •                                    | •                                                     | •                                          |                                                       | •                              |
| 10  | Lawsuit on zoning violations still in court, yet building is in use                               |                                                   |                                              |                                                                     |                                                                                  |                                                                          | •                                                                            | •                                    | •                                                     |                                            |                                                       | •                              |

What are the common problems to the issue and how they can be addressed?

The most common problems are in the rows in the worksheets. A set of solutions are provided in the columns, with markings for the relevant solutions for each problem. Some solutions may be obvious, but they are marked for completeness. Additional problems or solutions may be added.

Determining factors for each solution

| Factor              | Item                           | Require resident input for any change in land use | Assess impact of land use change on locality | Put up 30 day notice for change in land use request on the property | Change the law to give community formal role in land-use approval and monitoring | Restrict land-use to CDP guidelines unless approved by residents / Govt. | Restrictions of F.A.R. to be consistent unless approved by residents / Govt. | Enforce zoning and land use policies | Inform relevant agency of construction on public land | Take action on construction on public land | Application for Govt. land for community requirements | Regular monitoring |
|---------------------|--------------------------------|---------------------------------------------------|----------------------------------------------|---------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------|-------------------------------------------------------|--------------------------------------------|-------------------------------------------------------|--------------------|
|                     |                                | 1                                                 | 2                                            | 3                                                                   | 4                                                                                | 5                                                                        | 6                                                                            | 7                                    | 8                                                     | 9                                          | 10                                                    | 11                 |
| Finance             | One-time expenditure reqd.     |                                                   |                                              |                                                                     |                                                                                  |                                                                          |                                                                              |                                      |                                                       |                                            |                                                       |                    |
|                     | Ongoing expenditure reqd.      |                                                   |                                              |                                                                     |                                                                                  |                                                                          |                                                                              |                                      |                                                       |                                            |                                                       |                    |
| Policy-related      | Need policy awareness          | •                                                 |                                              |                                                                     |                                                                                  | •                                                                        |                                                                              |                                      |                                                       |                                            |                                                       | •                  |
|                     | Need enforcement of policy     | •                                                 |                                              |                                                                     |                                                                                  | •                                                                        | •                                                                            | •                                    | •                                                     | •                                          |                                                       | •                  |
|                     | Need change in policy          | •                                                 |                                              |                                                                     | •                                                                                |                                                                          |                                                                              |                                      |                                                       |                                            |                                                       |                    |
| Citizen involvement | One-time                       |                                                   |                                              |                                                                     |                                                                                  |                                                                          |                                                                              |                                      |                                                       |                                            | •                                                     |                    |
|                     | Ongoing                        | •                                                 |                                              | •                                                                   | •                                                                                |                                                                          | •                                                                            |                                      | •                                                     |                                            |                                                       | •                  |
| Time factor         | < 6 Mths.                      |                                                   |                                              | •                                                                   |                                                                                  |                                                                          | •                                                                            | •                                    | •                                                     | •                                          | •                                                     |                    |
|                     | 6-12 Mths.                     |                                                   |                                              |                                                                     |                                                                                  |                                                                          |                                                                              |                                      |                                                       |                                            |                                                       |                    |
|                     | 1-3 Yr.                        |                                                   | •                                            |                                                                     |                                                                                  |                                                                          |                                                                              |                                      |                                                       |                                            |                                                       |                    |
|                     | >3 Yr.                         |                                                   |                                              |                                                                     | •                                                                                |                                                                          |                                                                              |                                      |                                                       |                                            |                                                       |                    |
| Solution applied at | Individual level               |                                                   |                                              | •                                                                   |                                                                                  |                                                                          | •                                                                            |                                      | •                                                     | •                                          |                                                       | •                  |
|                     | N'hood level                   | •                                                 | •                                            | •                                                                   |                                                                                  |                                                                          | •                                                                            |                                      | •                                                     | •                                          | •                                                     |                    |
|                     | Ward level                     | •                                                 | •                                            | •                                                                   |                                                                                  |                                                                          | •                                                                            |                                      |                                                       | •                                          | •                                                     |                    |
|                     | Multi-ward                     |                                                   |                                              |                                                                     |                                                                                  |                                                                          |                                                                              | •                                    |                                                       |                                            |                                                       |                    |
| Agencies concerned  | BMP                            |                                                   |                                              |                                                                     |                                                                                  |                                                                          | •                                                                            |                                      |                                                       | •                                          |                                                       |                    |
|                     | BWSSB                          |                                                   |                                              |                                                                     |                                                                                  |                                                                          |                                                                              |                                      |                                                       |                                            |                                                       |                    |
|                     | BESCOM                         |                                                   |                                              |                                                                     |                                                                                  |                                                                          |                                                                              |                                      |                                                       |                                            |                                                       |                    |
|                     | BDA                            | •                                                 | •                                            | •                                                                   | •                                                                                |                                                                          | •                                                                            | •                                    | •                                                     | •                                          | •                                                     | •                  |
|                     | Other - subject matter experts |                                                   | •                                            |                                                                     |                                                                                  |                                                                          |                                                                              |                                      |                                                       |                                            |                                                       |                    |
| Relative importance |                                |                                                   |                                              |                                                                     |                                                                                  |                                                                          |                                                                              |                                      |                                                       |                                            |                                                       |                    |

What is required for these solutions to be successfully implemented?

The rows in the worksheet alongside gives the various factors required, with markings for the relevant factors for each solution.

02

## building violation & land encroachment



**BUILDING VIOLATIONS**

**Introduction**

For any building to be erected or altered in Bangalore, the owner of the land has to take approval of the building plan from the appropriate Engineering Department of the Bangalore Mahanagara Palike (BMP). The approval is in the form of a Building Licence.

A Building Plan is a pictorial depiction of the building to be erected on the site. Building Plans are to be made as per the Building Bylaws subject to the provisions of the Revised Comprehensive Development Plan (RCDP) of 1995. The Building Bylaws have now been revised and the Draft Building Bylaw-2003 was published in February 2003. Notification of this revision is pending as of this publication.

**What is the procedure for obtaining a Building licence?**

Every person seeking a Building Licence must give a notice in writing to the BMP in its prescribed form. The notice shall be accompanied by the building plans, documents and certificates as prescribed in the Bylaws. With the notice, the applicant should pay a building licence fee as prescribed. If all the documents furnished by the applicant are in accordance with the rules as per the Bylaws and the RCDP, the licence will be issued within 30 days . If the authority fails to do so, the licence is deemed to be sanctioned.

The BMP may either grant a licence as per the proposal or with such modifications or conditions as it may deem necessary. While granting licences the authority is supposed to enforce a condition that at least two trees be planted in the interest of improving the environment of the area, in the site of size exceeding 300 sq. mts.

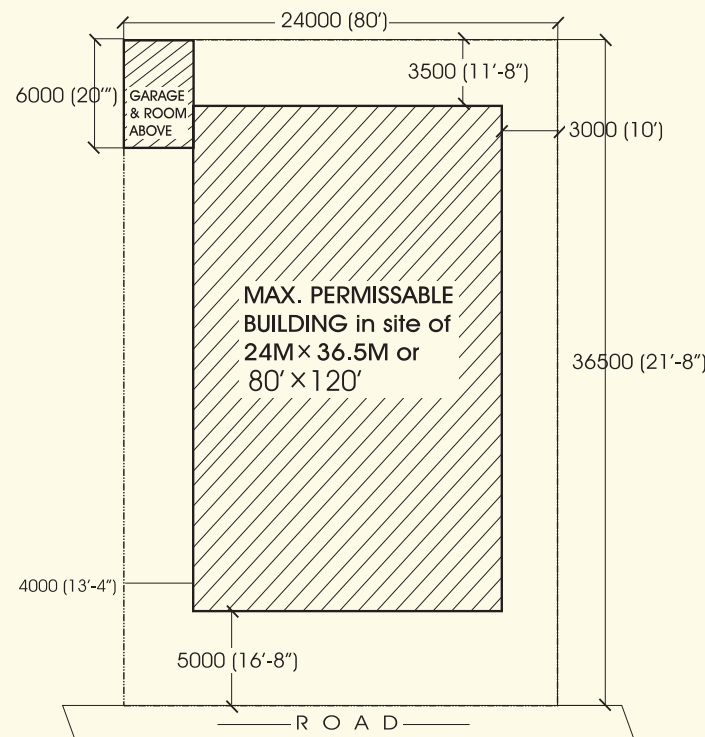
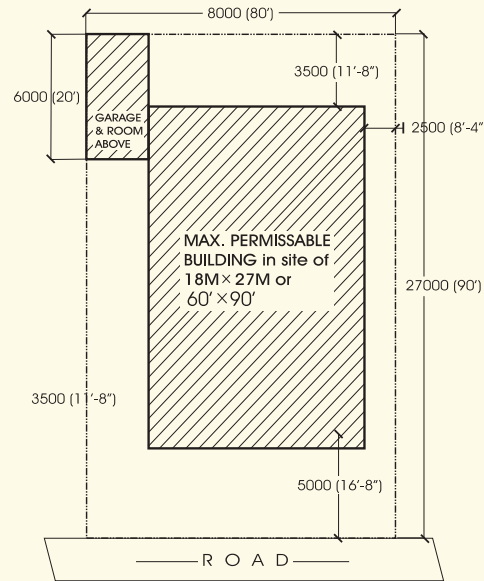
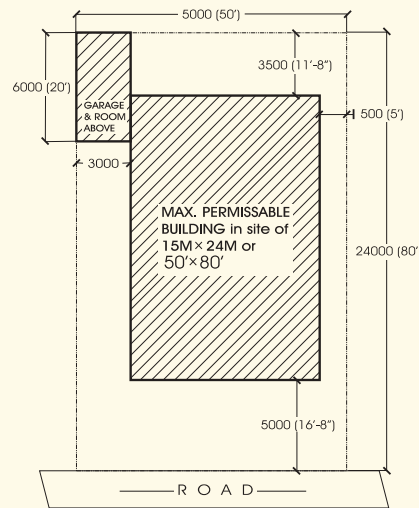
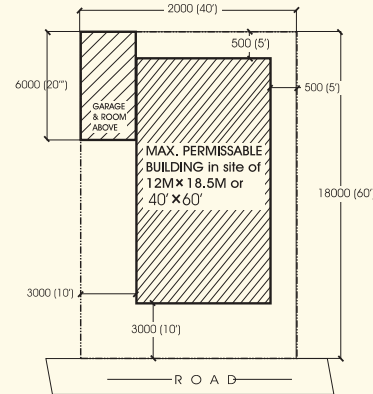
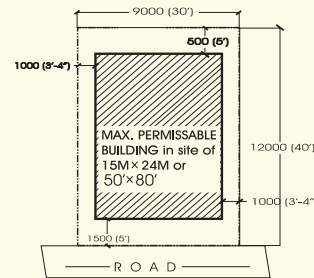
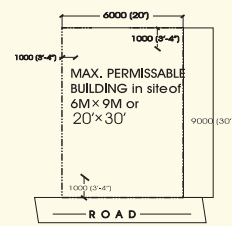
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What are building setbacks?

Set backs dictate the possible footprint of the building or the property. Set Backs provide the required privacy for neighbouring properties and respect the road and footpath users needs. They are pre-scribed in the RCDP of 1995 beyond which nothing can be constructed towards the plot boundary. Set backs are to be provided in the front, rear and sides for sites of different depths and widths. They vary for by plot size for residential, commercial, public and semi-public buildings. They also vary according to the location of the plot with respect to the block. Depending upon the usage, setbacks also increase for parking requirements. They are as under.

**Table A** Exterior open spaces/Set backs for residential commercial, Public and semi-public, Traffic and Transport (T&T) and Public utility (P.U.) buildings upto 9.5. mtrs in height.

| Front and Rear Setbacks |             |  |            |  |                                      |  | Side Setbacks |  |  |  |  |  |  |
|-------------------------|-------------|--|------------|--|--------------------------------------|--|---------------|--|--|--|--|--|--|
| Depth of site in mtrs.  | Residential |  | Commercial |  | T&T, P.U. and public and semi-public |  |               |  |  |  |  |  |  |



**Maximum permissible building areas for various site dimensions**

## LAND ENCROACHMENT

### Introduction

Land encroachment is the illegal occupation of public/private land or building by any person other than the owner or any person authorized by him. The following are some answers to commonly asked questions relating to land encroachment. Footpath encroachment, encroachment of parks, illegal constructions on C.A. Sites are examples of encroachment.

### What is the penalty if BDA / BMP land is encroached upon?

The BDA / BMP has the mandate to evict occupation and demolish any unauthorized construction on it's property.

### What is to be done if Private Properties are encroached upon?

Citizens are responsible to protect their own land from being encroached upon. If any citizen's land has illegal construction on it, he/she can file a case against the encroaching party.

### Which is the agency that can be contacted with respect to land encroachment?

The Special task force at the Recovery Cell of the BDA can be contacted at 3364227 with any information that will help them acquire encroached or illegally acquired property.

Also, the Zonal Deputy Commissioners(ZDC) of the BMP, in cases where the land belongs to the BMP, may be contacted at the numbers given below:

|     |             |         |
|-----|-------------|---------|
| ZDC | West Range  | 3361704 |
| ZDC | South Range | 6566365 |
| ZDC | East Range  | 5582247 |

What are the common problems to the issue and how they can be addressed?

The most common problems are in the rows in the worksheets. A set of solutions are provided in the columns, with markings for the relevant solutions for each problem. Some solutions may be obvious, but they are marked for completeness. Additional problems or solutions may be added.

Matching solutions to problems

|     |                                                                            | POSSIBLE SOLUTIONS          |                                            |                                                |                                                   |                                                      |                                                                  |                                     |                        |                 |                |
|-----|----------------------------------------------------------------------------|-----------------------------|--------------------------------------------|------------------------------------------------|---------------------------------------------------|------------------------------------------------------|------------------------------------------------------------------|-------------------------------------|------------------------|-----------------|----------------|
| No. | Problems                                                                   | Awareness drive for by laws | Display approved plans prominently at site | Review of completed construction as sanctioned | Review modifications for compliance with sanction | Inform BMP contractor to pick-up construction debris | Have consensus agreement by residents on timings of construction | Secure prior tree planting approval | Inform relevant agency | Provide fencing | File a lawsuit |
|     |                                                                            | 1                           | 2                                          | 3                                              | 4                                                 | 5                                                    | 6                                                                | 7                                   | 8                      | 9               | 10             |
| 1   | Lack of clarity on by-laws                                                 | •                           |                                            |                                                |                                                   |                                                      |                                                                  |                                     |                        |                 |                |
| 2   | Violation of setbacks from n'bouring property                              | •                           | •                                          | •                                              |                                                   |                                                      |                                                                  |                                     |                        |                 |                |
| 3   | Violation of setbacks from street front                                    | •                           | •                                          | •                                              |                                                   |                                                      |                                                                  |                                     |                        |                 |                |
| 4   | Violation of F.A.R.                                                        | •                           | •                                          | •                                              |                                                   |                                                      |                                                                  |                                     |                        |                 |                |
| 5   | Sanctioning of illegal plans                                               | •                           |                                            | •                                              |                                                   |                                                      |                                                                  |                                     |                        |                 |                |
| 6   | Occupancy Certificate to illegal construction                              | •                           | •                                          | •                                              |                                                   |                                                      |                                                                  |                                     |                        |                 |                |
| 7   | Illegal additions/ alterations to existing bldgs.                          | •                           |                                            |                                                | •                                                 |                                                      |                                                                  |                                     |                        |                 |                |
| 8   | Construction material and debris blocking road                             | •                           |                                            |                                                |                                                   | •                                                    |                                                                  |                                     |                        |                 |                |
| 9   | Construction noise disturbs residents at all hours                         |                             |                                            |                                                |                                                   |                                                      | •                                                                |                                     |                        |                 |                |
| 10  | Private planting of trees on footpaths blocking passage                    |                             |                                            |                                                |                                                   |                                                      |                                                                  | •                                   |                        |                 |                |
| 11  | Lawsuit on Govt. building violation still in court, yet building is in use |                             |                                            |                                                |                                                   |                                                      |                                                                  |                                     | •                      |                 |                |
| 13  | Encroachment on government land                                            |                             |                                            |                                                |                                                   |                                                      |                                                                  |                                     | •                      | •               |                |
| 14  | Encroachment on private land                                               |                             |                                            |                                                |                                                   |                                                      |                                                                  |                                     |                        | •               | •              |
| 15  | Building encroachment on public land/ footpaths                            | •                           |                                            |                                                |                                                   |                                                      |                                                                  |                                     | •                      |                 |                |
| 16  | Lawsuit on Govt. land encroachment still in court, yet building is in use  |                             |                                            |                                                |                                                   |                                                      |                                                                  |                                     | •                      |                 |                |

Determining factors for each solution

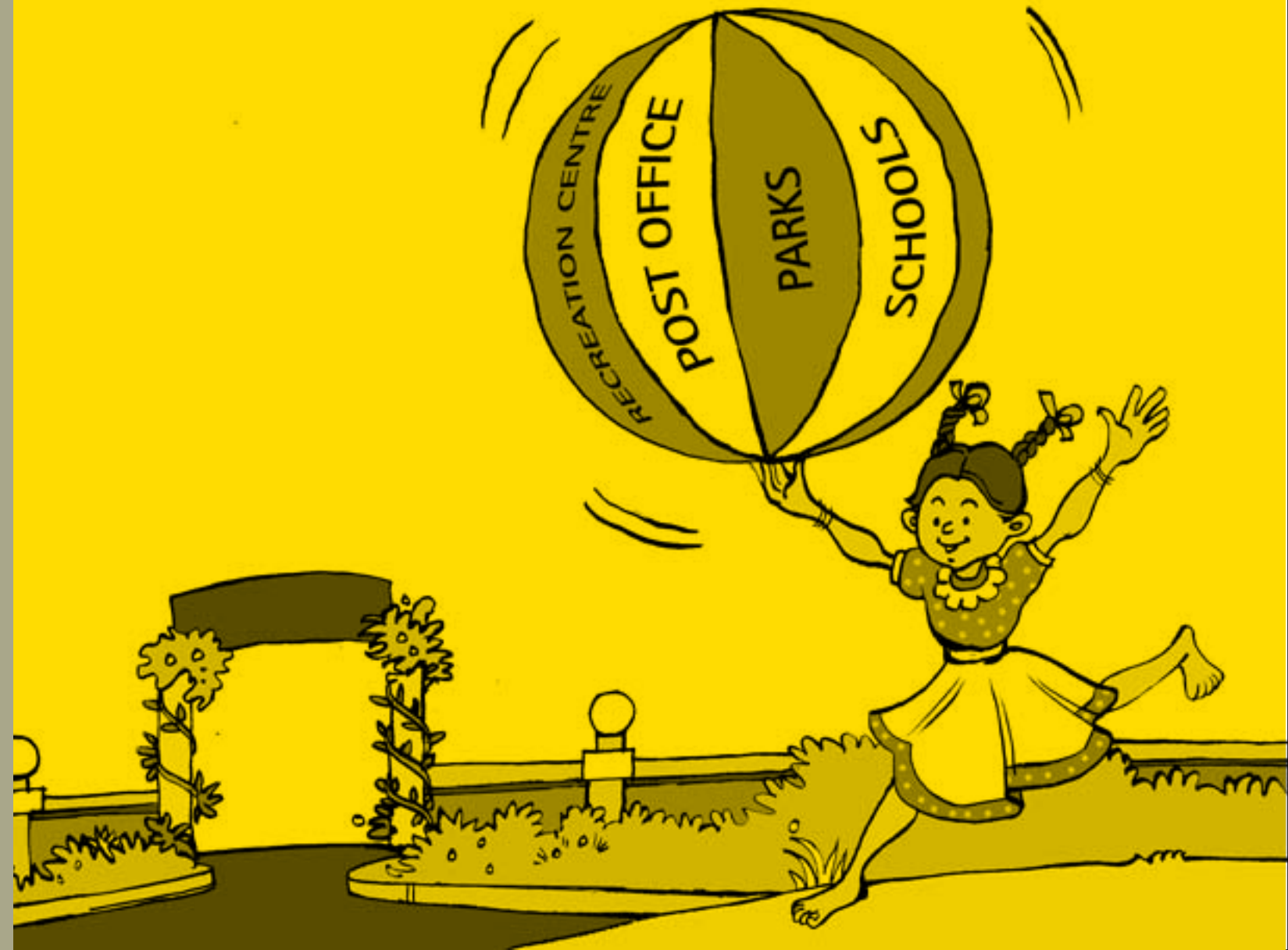
| Factor              | Item                       | Awareness drive for by laws | Display approved plans prominently at site | Review of completed construction as sanctioned | Review modifications for compliance with sanction | Inform BMP contractor to pick-up construction debris | Have consensus agreement by residents on timings of construction | Secure prior tree planting approval | Inform relevant agency | Provide fencing | File a lawsuit |
|---------------------|----------------------------|-----------------------------|--------------------------------------------|------------------------------------------------|---------------------------------------------------|------------------------------------------------------|------------------------------------------------------------------|-------------------------------------|------------------------|-----------------|----------------|
|                     |                            | 1                           | 2                                          | 3                                              | 4                                                 | 5                                                    | 6                                                                | 7                                   | 8                      | 9               | 10             |
| Finance             | One-time expenditure reqd. |                             |                                            |                                                |                                                   |                                                      |                                                                  |                                     |                        |                 |                |
|                     | Ongoing expenditure reqd.  |                             |                                            |                                                |                                                   |                                                      |                                                                  |                                     |                        |                 |                |
| Policy-related      | Need policy awareness      | •                           |                                            |                                                |                                                   |                                                      |                                                                  |                                     |                        |                 |                |
|                     | Need enforcement of policy |                             | •                                          | •                                              | •                                                 | •                                                    |                                                                  |                                     |                        |                 |                |
|                     | Need change in policy      |                             |                                            |                                                |                                                   |                                                      | •                                                                | •                                   |                        |                 |                |
| Citizen involvement | One-time                   |                             |                                            |                                                |                                                   |                                                      | •                                                                | •                                   |                        | •               | •              |
|                     | Ongoing                    | •                           | •                                          |                                                |                                                   | •                                                    |                                                                  |                                     | •                      |                 |                |
| Time factor         | < 6 Mths.                  | •                           | •                                          | •                                              | •                                                 | •                                                    | •                                                                | •                                   | •                      | •               |                |
|                     | 6-12 Mths.                 |                             |                                            |                                                |                                                   |                                                      |                                                                  |                                     |                        |                 |                |
|                     | 1-3 Yr.                    |                             |                                            |                                                |                                                   |                                                      |                                                                  |                                     |                        |                 |                |
|                     | >3 Yr.                     |                             |                                            |                                                |                                                   |                                                      |                                                                  |                                     |                        |                 | •              |
| Solution applied at | Individual level           | •                           |                                            | •                                              | •                                                 |                                                      |                                                                  | •                                   |                        | •               | •              |
|                     | N'hood level               | •                           | •                                          | •                                              | •                                                 | •                                                    | •                                                                |                                     | •                      | •               | •              |
|                     | Ward level                 |                             |                                            |                                                |                                                   |                                                      | •                                                                |                                     | •                      |                 |                |
|                     | Multi-ward                 |                             |                                            |                                                |                                                   |                                                      |                                                                  |                                     |                        |                 |                |
| Agencies concerned  | BMP                        | •                           | •                                          | •                                              | •                                                 | •                                                    | •                                                                | •                                   | •                      | •               |                |
|                     | BWSSB                      |                             |                                            |                                                |                                                   |                                                      |                                                                  |                                     |                        |                 |                |
|                     | BESCOM                     |                             |                                            |                                                |                                                   |                                                      |                                                                  |                                     |                        |                 |                |
|                     | BDA                        |                             |                                            |                                                |                                                   |                                                      |                                                                  |                                     | •                      | •               |                |
|                     | Other                      |                             |                                            |                                                |                                                   |                                                      |                                                                  |                                     |                        |                 |                |
| Relative importance |                            |                             |                                            |                                                |                                                   |                                                      |                                                                  |                                     |                        |                 |                |

What is required for these solutions to be successfully implemented?

The rows in the worksheet alongside gives the various factors required, with markings for the relevant factors for each solution.

03

civic amenity  
sites



Introduction

According to the Karnataka Town and Country Planning Act, approximately 10% of any residential development is to be set aside for Civic Amenity Sites. However there has been no enforcement of this policy. Private developments invariably monetise the maximum amount of land leaving very little in the way of Civic Amenity opportunities. As a result neighborhoods are not provided with adequate public spaces and Civic Amenities.

The Bangalore Development Authority (BDA) Act describes the following as Civic Amenities:

1. A market, a post office, a telephone exchange, a bank, a fair price shop, a milk booth, a school, a dispensary, a hospital, a pathological laboratory, a maternity home, a child care center, a library, a gymnasium, a bus-stand or a bus stop;
2. A recreation center run by the Government or by the Corporation;
3. A center for educational, social or cultural activities established by the Central Government or the State Government or by a body established by the Central Government or the State Government;
4. A center for educational, religious, social or cultural activities or for philanthropic service run by a co-operative society registered under the Karnataka Co-operative Societies Act, 1959 or a Society registered under the Karnataka Societies Registration Act, 1960 or by a trust created wholly for charitable, educational or religious purposes;
5. A police station, an area office or a service station of the Corporation or the Bangalore Water Supply and Sewerage Board or the Karnataka Electricity Board and
6. Such other amenities as the Government may, by notification specify.

What is a C. A. Site

However, the period can be extended by another 60 days where, in addition to the lease amount, an interest at the rate of 18% on the amount will have to be paid. Where the allottee fails to pay the amount within the extended 60 days, the allotment will be cancelled by the BDA and the allottee will have to forego the initial deposit amount.

4. After the payment is made, the allottee will have to enter into, with the BDA, a lease agreement in a prescribed form. The lease period commences from the date of registration of the lease agreement, which will have to be processed by the lessee.
5. From the date of registration, the lessee shall be liable to pay the taxes, fees and cesses payable on the site and any building constructed thereon.
6. The lessee shall neither become the owner of the site nor derive any title to the site allotted. He cannot not sub-divide, sub-lease or create any charge on the site.
7. The lessee must use the site exclusively for providing civic amenity for which it is allotted.
8. The lessee must complete the construction of the building within a period of three years from the date of registration or a period as extended by the BDA. If the building is not completed within the stipulated time, the BDA has the authority to cancel the lease after giving notice to the lessee. The lessee will have to forfeit twelve and a half percent of the lease amount. The balance will be refunded to the lessee by the BDA.
9. On expiry of the lease, if the lease is not renewed, the site along with any buildings thereon shall vest in the authority free of cost from any encumbrance.

### Does this mean that the city of Bangalore has 10% of land that is specifically used for Civic Amenities?

No. As per the BDA ACT of 197

What are the common problems to the issue and how they can be addressed?

The most common problems are in the rows in the worksheets. A set of solutions are provided in the columns, with markings for the relevant solutions for each problem. Some solutions may be obvious, but they are marked for completeness. Additional problems or solutions may be added.

What is required for these solutions to be successfully implemented?

The rows in the worksheet alongside gives the various factors required, with markings for the relevant factors for each solution.

Matching solutions to problems

|     |                                                                   | POSSIBLE SOLUTIONS                                 |                                         |                                                            |                   |  |
|-----|-------------------------------------------------------------------|----------------------------------------------------|-----------------------------------------|------------------------------------------------------------|-------------------|--|
| No. | Problems                                                          | Apply to the BDA when the BDA invites applications | Follow-up with the BDA by the applicant | Take the annual lease payment rather than lump sum payment | Report to the BDA |  |
|     |                                                                   | 1                                                  | 2                                       | 3                                                          | 4                 |  |
| 1   | Insufficient public service buildings, post offices, library etc. |                                                    |                                         |                                                            |                   |  |



Introduction

India does not have a strong track record of maintenance and asset management at state level. Much of the religious heritage of India, for instance, was codified by the state from the establishment of the Archaeological Survey of India a century ago, but the preservation of this heritage remained the responsibility of local communities in the form of trusts supported by donations from pilgrims. The state has not yet developed a serious concern for asset management - which is reflected in the deterioration of much of the heritage sites under its care. In Bangalore, TP Issar, MA Parthasarthy, Bimal Desai, and others have made tireless efforts on the issue. The Bangalore Urban Arts Commission (BUAC), which spearheaded the initial efforts, has now been dissolved.

National policy began to be formulated in the 1950's and in accordance with the development thinking of that time gave the state primary responsibility for preservation and management of the national heritage, as enshrined in the Historical Sites Act of 1954.

Article 48 A

Protection and Improvement of environment and safeguard of forests and wildlife: The State shall endeavor to protect and improve the environment and to safe guard the forest and wildlife of the country.

Article 49

Protection of monuments and places and objects of national importance- It shall be the obligation of the State to protect every monument of place or object of artistic or historic interest, declared by or under law made by parliament to be of national importance, from spoilation, disfigurement, destruction, removal, disposal or export, as the case may be.

What are the common problems to the issue and how they can be addressed?

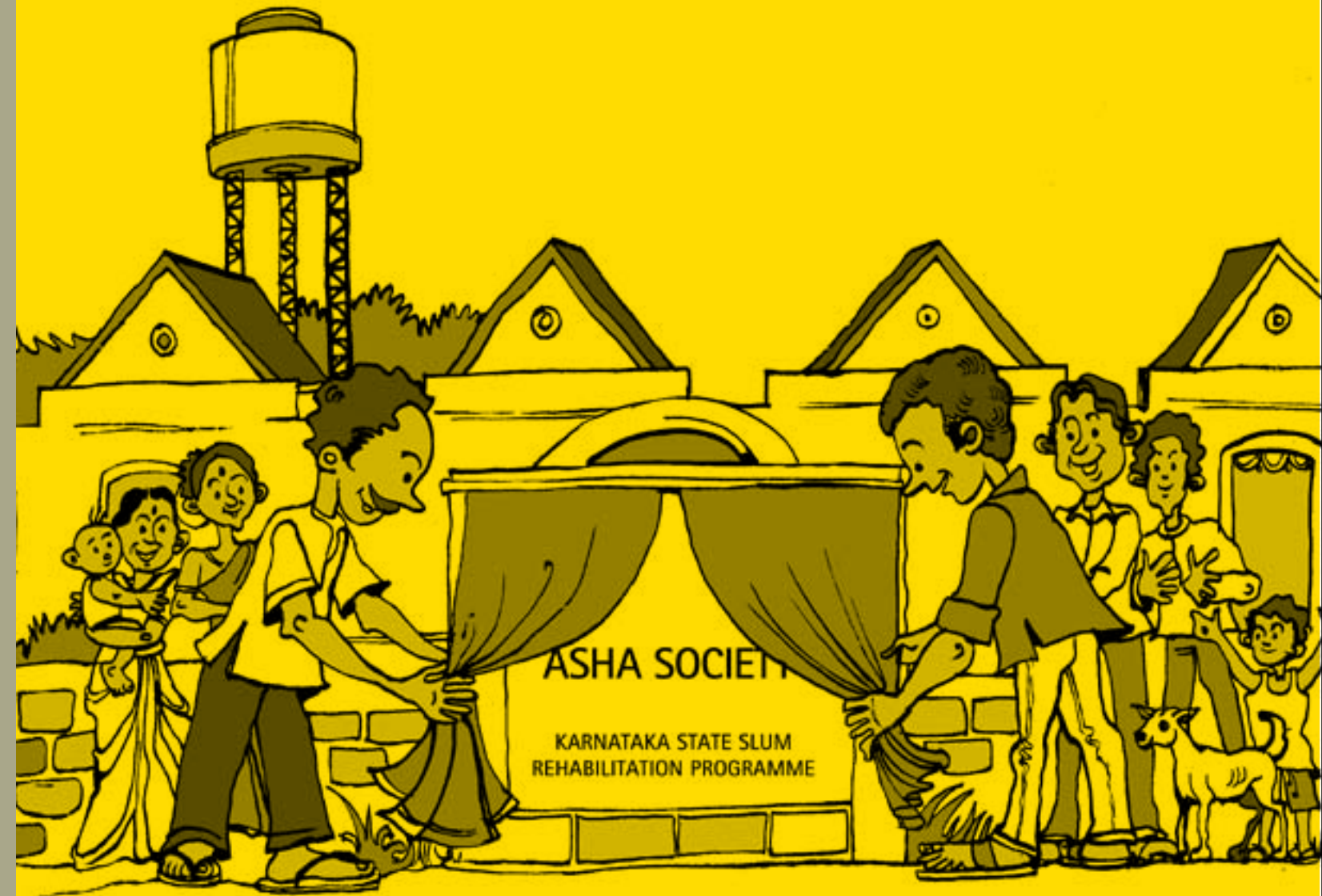
The most common problems are in the rows in the worksheets. A set of solutions are provided in the columns, with markings for the relevant solutions for each problem. Some solutions may be obvious, but they are marked for completeness. Additional problems or solutions may be added.

Matching solutions to problems

|     |                                                                | POSSIBLE SOLUTIONS                                                  |                                     |                                       |                                                                      |                                                   |                                                       |                                                     |                                                                            |
|-----|----------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------|---------------------------------------|----------------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------|----------------------------------------------------------------------------|
| No. | Problems                                                       | Have a clearly defined policy on heritage protection & preservation | Enforce protection of heritage site | Enforce preservation of heritage site | Include restoration practices in architecture engineering curriculum | Encourage trade skills in the area of restoration | Allow citizens access to heritage buildings and sites | Encourage heritage tourism and private partnerships | Give incentives to private owners to preserve and restore their properties |
| 1   | No suitable laws on construction, preservation and restoration | •                                                                   |                                     |                                       |                                                                      |                                                   |                                                       |                                                     |                                                                            |
| 2   | Public heritage building /site being demolished /monitized     |                                                                     | •                                   |                                       |                                                                      |                                                   |                                                       |                                                     |                                                                            |
| 4   | Public heritage building /site in poor                         |                                                                     |                                     |                                       |                                                                      |                                                   |                                                       |                                                     |                                                                            |

05

## declaration of slums



### Introduction

The issue of slums is a complex one, with many dimensions and many different players: the poor themselves, the middle-class, the various government agencies, the NGOs who work with the poor etc. Bangalore City today has around 750 slums out of which only about 362 are recognised by the Karnataka Slum Clearance Board (KSCB). Slums are mushrooming on unused land, railway land, garbage pile-ups, inaccessible terrain, beside drains etc. Slums have existed for years on unused land, much before such land was marked as belonging to the BDA/BMP. The Government provides insufficient housing to the urban poor, and they cannot afford to buy land in the city. Residents of slums are continuously fighting to change the perception of the middle-class people towards ‘slum dwellers’ as a threat or menace and start viewing them as Citizens too. Slums today are constantly under an eviction threat from various agencies. However, they form an integral part of the service sector of the city. They are the domestic helpers, cleaners, cooks, house keepers etc. for the upper and middle classes of society in the city. Several NGO’s in the city are trying to ensure that residents of the slums have adequate and safe housing and other basic services like water, electricity, drains etc. This is being done with financial assistance from HUDCO, grants from the Government, other City Authorities like the BMP, KSCB, private organizations and people.

The following are some commonly asked questions regarding slums. An example of slum upgradation is the history of the Parsi Garden Slum that has been put down.

### What is the process of declaration of slums?

The Karnataka

What if the slum is on private land?

The owner of such private property has the following options:

- 1. He can go to the High Court and can prevent his property from being acquired by the Slum Clearance Board (SCB). However, he will have to do so before the KSCB acquires the land under section 17 of the Karnataka Slum Areas (improvement and clearance) Act 1973.
- 2. He can negotiate a settlement with the residents of the slum
- 3. He can claim compensation in the manner mentioned before.

Can slums be relocated?

Slums may be relocated only with the consensus of the residents of the slum and only if the land is going to be used for public purposes and is in the interest of the public at large. E.g. If a major water supply line is to pass through the slum necessitating relocation. Also, an alternative place will have to be identified and all the interested parties/agencies will have to come to a common consensus.

Which is the agency that can be contacted for information relating to this topic?

The KSCB may be contacted at 3340930, 3347508. The direct number of the Commissioner is 3363085.

The Parsi garden Slum re-housing model:

No. of families: 41

What are the common problems to the issue and how they can be addressed?

The most common problems are in the rows in the worksheets.A set of solutions are provided inthe columns, with markings for the relevant solutions for each problem.Some solu- tions may be obvious, but theyare marked for complettness. Additional problems or solutions may be added.

Matching solutions to problems

|     |          | POSSIBLE SOLUTIONS                        |                         |                                                                |                                    |                                                     |                                                                |                                   |                    |                  |                                 |                           |                                                                       |
|-----|----------|-------------------------------------------|-------------------------|----------------------------------------------------------------|------------------------------------|-----------------------------------------------------|----------------------------------------------------------------|-----------------------------------|--------------------|------------------|---------------------------------|---------------------------|-----------------------------------------------------------------------|
| No. | Problems | Complain to police/KSCB /owner about slum | Follow-up on complaints | Contact private owners about legalizing slum on their property | Obtain help on gathering documents | Interact with Karnataka Slum Clearance Board (KSCB) | Organize iscussions between concerned parties to resolve issue | Contact NGOs working on the issue | Sensitize citizens | Change in policy | Apply for Govt. housing schemes | Seek private sector funds | Put up notice on slum site stating declaration process is under way</ |



**Introduction**

Posters promoting films, political parties and candidates, and events in the city are often illegally pasted on public and private properties marring the physical space. In several junctions banners and buntings that are mounted for specific occasions are not removed within the stipulated time.

Advertisement hoardings are erected throughout the city, often without the authorization of the BMP. As of 30th June 2003, there are a mere 434 authorized hoardings. The annual revenue generated from advertisement tax by the BMP is a meager Rs.81 lakh.

The policy concerning the above is found in the by-laws framed by the City Municipal Corporation, under the City of Bangalore Municipal Corporation Act 1949. These by-laws have been in effect since November 1956. They are currently in the process of being amended.

The following are the answers to some of the commonly asked questions by the citizens:

**Are citizens authorised to stick posters in open and public spaces promoting events?**

No. According to the Karnataka Open Places (prevention of disfigurement) Act, 1981 (as amended), and notifications there under, sticking of posters on public and private property, have been prohibited.

**What is the policy regarding banners and buntings?**

What are the common problems to the issue and how they can be addressed?

The most common problems are in the rows in the worksheets.A set of solutions are provided in the columns, with markings for the relevant solutions for each problem. Some solutions may be obvious, but they are marked for completeness. Additional problems or solutions may be added.

Matching solutions to problems

|     |                                                                                      | POSSIBLE SOLUTIONS                                              |                                     |                                                       |                                               |
|-----|--------------------------------------------------------------------------------------|-----------------------------------------------------------------|-------------------------------------|-------------------------------------------------------|-----------------------------------------------|
| No. | Problems                                                                             | Pre-approve design & content from the BMP and local communities | File complaint with relevant agency | Monitor violations of policies by citizen communities | Strict vigilance by the BMP on any violations |
|     |                                                                                      | 1                                                               | 2                                   | 3                                                     | 4                                             |
| 1   | Movie posters and graffiti on public and private property, not authorized by the BMP |                                                                 | •                                   | •                                                     | •                                             |
| 2   | Banners and buntings left unremoved by the political parties after campaign          |                                                                 | •                                   | •                                                     | •                                             |
| 3   | Posters, banners, hoardings, etc put up in prohibited areas                          |                                                                 | •                                   | •                                                     | •                                             |
| 4   | Unsightly hoardings in residential n'hoods                                           | •                                                               | •                                   | •                                                     | •                                             |
| 5   | Unsightly hoardings in commercial n'hoods                                            | •                                                               | •                                   | •                                                     | •                                             |
| 6   | Hoardings put in pvt property unauthorized by BMP spoiling the visual aesthetics     | •                                                               | •                                   | •                                                     | •                                             |
| 7   | Citizens not consulted about hoardings in residential areas                          |                                                                 |                                     | •                                                     |                                               |

What is required for these solutions to be successfully implemented?

The rows in the worksheet alongside gives the various factors required, with markings for the relevant factors for each solution.

Determining Factors For Each Solution

| Factor              | Item                       | Pre-approve design & content from the BMP and local communities | File complaint with relevant agency | Monitor violations of policies by citizen communities | Strict vigilance by the BMP on any violations |
|---------------------|----------------------------|-----------------------------------------------------------------|-------------------------------------|-------------------------------------------------------|-----------------------------------------------|
| Finance             | One-time expenditure reqd. |                                                                 |                                     |                                                       |                                               |
|                     | Ongoing expenditure reqd.  |                                                                 |                                     |                                                       |                                               |
| Policy-related      | Need policy awareness      | •                                                               | •                                   | •                                                     | •                                             |
|                     | Need enforcement of policy | •                                                               | •                                   | •                                                     | •                                             |
|                     | Need change in policy      |                                                                 |                                     |                                                       |                                               |
| Citizen involvement | One-time                   |                                                                 | •                                   |                                                       |                                               |
|                     | Ongoing                    | •                                                               | •                                   | •                                                     | •                                             |
| Time factor         | < 6 Mths.                  | •                                                               | •                                   | •                                                     | •                                             |
|                     | 6-12 Mths.                 |                                                                 |                                     |                                                       |                                               |
|                     | 1-3 Yr.                    |                                                                 |                                     |                                                       |                                               |
|                     | >3 Yr.                     |                                                                 |                                     |                                                       |                                               |
| Solution applied at | Individual level           | •                                                               | •                                   | •                                                     | •                                             |
|                     | N'hood level               | •                                                               | •                                   | •                                                     | •                                             |
|                     | Ward level                 |                                                                 |                                     |                                                       |                                               |
|                     | Multi-ward                 |                                                                 |                                     |                                                       |                                               |
| Agencies concerned  | BMP                        | •                                                               | •                                   | •                                                     | •                                             |
|                     | BDA                        |                                                                 |                                     |                                                       |                                               |
|                     | BWSSB                      |                                                                 |                                     |                                                       |                                               |
|                     | BESCOM                     |                                                                 |                                     |                                                       |                                               |
|                     | Other                      |                                                                 |                                     |                                                       |                                               |
| Relative importance |                            |                                                                 |                                     |                                                       |                                               |



## environmental resources

- 01 Parks
- 01 Tree planting and tree cutting
- 01 Rain water harvesting
- 01 Lakes
- 01 Storm water drains

## 07 parks



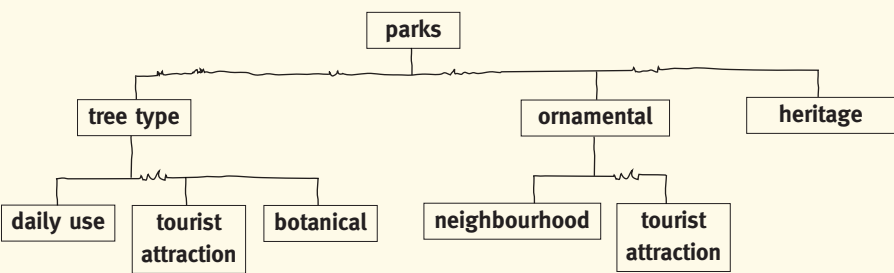
Introduction

Bangalore has over 630 parks and innumerable gardens to keep it blooming throughout the year. The BMP and the BDA have started the process of restoring the parks.

For the year 2002-03 the BMP has spent Rs.23 crores for the development of new parks, upgradation and maintenance of existing parks, medians, circles etc. An expenditure of Rs.29 crores is estimated for the year 2003-04.

The following are the answers to some of the commonly asked questions:

What are the different types of Parks?



What are the policies of the BMP relating to the development of parks?

General Guidelines

- The parks must be swept daily and leaves and other material should be systematically cleared to a designated compost pit.
- For watering, either sprinkler system or pipes or hand pots can be used. All plants and lawn of the park must be watered everyday.
- De-weeding work must be done once in every fortnight and the garbage should be disposed off through BMP garbage disposal vehicles.
- Digging and forming water channels should be under taken before and after rains once in every two months.
- Supply of manure, plant nutrients, red soil, horse manure, cow dung, fodde, sand etc. and to spread the same over lawns and plants in the ratio of 5 tons before rains and 4 tons after rains.
- Plant protection, disease prevention, insect prevention, prevention of white ants should be made by use of chemicals for mixing with soil, sprays, pesticides, etc. The same is to be undertaken 6 times every year.
- Protection of plants, flowers, fruits, fencing and general security of the park is to be undertaken. Wherever there is theft or damage, fines will be levied on the contractor. If such incidents take place more than twice, the contract will cease.

Security Guidelines

- The contractor shall employ necessary security personnel.
- Uniforms, whistle and batons are to be completely borne by the security personnel.
- Parks are to be opened for public at 5.30 a.m. and to close by 9.30 a.m. and reopen at 3 p.m. and close at 7.00 p.m.
- The security personnel should prevent public from playing any games like cricket, shuttle or any other ball game.
- Domestic animals should be prevented from entering the parks. Vehicles are also not to be allowed

What are the common problems to the issue and how they can be addressed?

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Matching solutions to problems

|     |                 | POSSIBLE SOLUTIONS     |                |                                     |                                        |                          |                 |                              |                          |                                   |                                                  |
|-----|-----------------|------------------------|----------------|-------------------------------------|----------------------------------------|--------------------------|-----------------|------------------------------|--------------------------|-----------------------------------|--------------------------------------------------|
| No. | Problems        | Get electricity supply | Sink bore well | Provide rainwater Harvesting system | Get BMP to supply water infrastructure | Provide fencing and gate | Hire a watchman | Hire a non-resident gardener | Hire a resident gardener | Undertake landscaping/hardscaping | Get BMP to pay for community maintenance of park |
|     |                 | 1                      | 2              | 3                                   | 4                                      | 5                        | 6               | 7                            | 8                        | 9                                 | 10                                               |
| 1   | No water supply |                        |                |                                     |                                        |                          |                 |                              |                          |                                   |                                                  |

Some of the solutions have finance as a factor what are the costs involved in providing such solution?

The worksheet alongside provides benchmark costing to enable rough cost estimates, only if the solution has finance as a factor, and if this costing can be estimated in a decentralised manner.

| Infrastructure details |              |      | Area (lxb) in mts. | Work required                             |                                                |                                                  |                                   |                                                |                                    |
|------------------------|--------------|------|--------------------|-------------------------------------------|------------------------------------------------|--------------------------------------------------|-----------------------------------|------------------------------------------------|------------------------------------|
|                        |              |      |                    | WATER                                     |                                                |                                                  |                                   |                                                |                                    |
|                        |              |      |                    | Sinking bore well + submi-ssible pump set | One-time bore well rainwater recharge capacity | Natural well-5’ dia., 30’ deep, width 1 HP motor | Pump house approx. o.5 HP. Motor. | Construction of sump tank 10,000 lts capacity. | Rainwater harvesting recharge pits |
| Map locator            | Name of park | Unit |                    | Per unit                                  | Per unit                                       | Per well                                         | Per house                         | Per sump                                       |                                    |

Some of the solutions have finance as a factor what are the costs involved in providing such solution?

The worksheet alongside provides benchmark costing to enable rough cost estimates, only if the solution has finance as a factor, and if this costing can be estimated in a decentralised manner.

| Infrastructure details |              |                        | Area (lxb) in mts. | Work required            |                  |                |           |                   |                   |                          |
|------------------------|--------------|------------------------|--------------------|--------------------------|------------------|----------------|-----------|-------------------|-------------------|--------------------------|
|                        |              |                        |                    | SECURITY                 |                  |                |           |                   |                   |                          |
|                        |              |                        |                    | Chain link fence w/stone | Chain link fence | Require Ed Ht. | Watch-man | Resi - dent maali | Comm- unity watch | Living quarter for maali |
| Map locator            | Name of park | Unit                   |                    | Per r.mt.                | Per sq.mt.       |                | Per month | Per month         |                   | Per unit                 |
|                        |              | Bench mark cost in Rs. |                    | 2,250                    | 400              |                | 3,000     | 2,500             | No cost           | 20,000                   |
| Park 1                 |              |                        |                    |                          |                  |                |           |                   |                   |                          |
| Park 2                 |              |                        |                    |                          |                  |                |           |                   |                   |                          |
| Park 3                 |              |                        |                    |                          |                  |                |           |                   |                   |                          |
| Park 4                 |              |                        |                    |                          |                  |                |           |                   |                   |                          |
| Park 5                 |              |                        |                    |                          |                  |                |           |                   |                   |                          |
| Park 6                 |              |                        |                    |                          |                  |                |           |                   |                   |                          |
| Park 7                 |              |                        |                    |                          |                  |                |           |                   |                   |                          |
| Park 8                 |              |                        |                    |                          |                  |                |           |                   |                   |                          |
| Park 9                 |              |                        |                    |                          |                  |                |           |                   |                   |                          |
| Park 10                |              |                        |                    |                          |                  |                |           |                   |                   |                          |
| Toatl                  |              |                        |                    |                          |                  |                |           |                   |                   |                          |

Some of the solutions have finance as a factor what are the costs involved in providing such solution?

The worksheet alongside provides benchmark costing to enable rough cost estimates, only if the solution has finance as a factor, and if this costing can be estimated in a decentralised manner.

| Infrastructure details |              |                       | Work required |       |                  |
|------------------------|--------------|-----------------------|---------------|-------|------------------|
|                        |              |                       | LANDSCAPING   |       |                  |
|                        |              |                       |               |       |                  |
|                        |              |                       | Landscaping   | Trees | Garden equipment |
| Map locator            | Name of park | Unit                  | Per sq.mt.    |       | Per park         |
|                        |              | Benchmark cost in Rs. | 725           | Free  | 10,000           |
| Park 1                 |              |                       |               |       |                  |
| Park 2                 |              |                       |               |       |                  |
| Park 3                 |              |                       |               |       |                  |
| Park 4                 |              |                       |               |       |                  |
| Park 5                 |              |                       |               |       |                  |
| Park 6                 |              |                       |               |       |                  |
| Park 7                 |              |                       |               |       |                  |
| Park 8                 |              |                       |               |       |                  |
| Park 9                 |              |                       |               |       |                  |
| Park 10                |              |                       |               |       |                  |
| Total                  |              |                       |               |       |                  |



TREE FELLING

Introduction

Bangalore is a city with numerous trees, many of which are years old. With developments mushrooming rapidly, infrastructure has been built ad hoc instead of being well-planned. As a result, trees are often found on roads and footpaths, blocking pedestrians and vehicular passage. The dilemma of protecting them or cutting them has been a subject of continuing controversy.

Tree felling without prior permission from the Forest department is an offence. Citizens are required to make a formal application to the Forest Department or the BMP before felling a tree.

The following are the answers to the commonly asked questions regarding tree planting.

What is the procedure to be followed to fell a tree?

The Tree Protection Act of 1976 lays down the procedures that have to be followed for cutting down of a tree. The procedure for cutting or removing a tree from its present location depends on who the owner of the tree is. The owner of the land on which a tree is rooted will be its owner. The owner of a tree may be:

- The BMP-If the tree is situated on the road
- The BDA-If it is on a BDA site or
- The Citizens- if the tree is situated on private land.

If the owner of the tree is the BMP and a citizen wishes to get a tree

**What does one do if the branches of a tree planted on a road are causing inconveniences?**

In such cases, the citizen, not being the owner of the tree, does not have the right to trim the branches. The BMP will have to be intimated and only they can take further action.

**What if the branches of trees are touching or nearly touching to electricity lines?**

The BESCOM has the authority to trim the branches of trees that are near electric lines. They regularly get the branches trimmed. In such cases, a complaint can be filed with BESCOM and they will trim the branches.

**Where can citizens file a complaint against people who illegally fell trees? Which is the agency that can be contacted for more information regarding this topic?**

Complaints can be filed with the Forest Dept. located at Aranya Bhavan, 18th cross, Malleswaram. There is also a tree help-line number that is 6534364. The Tree Squad number of the Forest Dept. is 3343543.

**TREE PLANTING**

**Introduction**

Bangalore’s soil and climate conditions allow an extraordinary variety of plants and trees to flourish.

Which are the agencies that can be contacted with respect to this subject?

The tree planting programme comes under the authority of the Horticulture Department of the BMP. This department comes under the control of the Deputy Commissioner- Development, who can be contacted at 2233754.

The numbers of the Zonal BMP Horticulture Departments are:  
South- 6566366                      West- 3369183                      East- 5327027

Table showing the number of trees that are to be planted ,area wise, under the ‘tree planting programme’ of the BMP.

|           | Name of the tree         |          |       |           |          |                 |            |        |      |         |         |          |       |
|-----------|--------------------------|----------|-------|-----------|----------|-----------------|------------|--------|------|---------|---------|----------|-------|
| Ward name | Kanchavala, Basavanapala | Mahogany | Honge | Jacaranda | Tabubiya | Teekuma Arjunia | Alpha farm | Badami | Neem | Raitery | Huvarsj | Hibiscus | Molem |





### Introduction

The estimated volume of freshwater supply on our planet is 2.5% of the total water, of which a mere 1% is usable. 20% of freshwater species are extinct and 50% of the world’s wetland is lost.

In India, the average annual availability of freshwater has dropped drastically:

- Year 1951: 5177 cu.m
- Year 2001: 1820 cu.m
- Year 2050: 1140 cu.m.

The United Nations has declared the year 2003 as the Year of the Freshwater. In urban areas like Bangalore, water resource depletion is reaching alarming proportions. Overpumping of groundwater results in rapid depletion and a poor quality of drinking water. The centralized water supply system is insufficient and expensive. Currently, it costs BWSSB Rs.16 per kilolitre to deliver it to every household, though the charge to consumers is Rs.6.00 per kilolitre. The additional cost is subsidized.

### What is rain water harvesting?

Rain water harvesting is a technique of collecting and storing water at the surface or in sub-surface aquifer, before it is lost as surface run off. Rain water surface run-off harvesting and roof-top water harvesting are two of the soundest techniques in preserving our water resources.

### How do we preserve our water quality and resources?

**What is surface runoff harvesting?**

The rainwater runoff can be collected from ground surfaces and directed into the existing low yield bore wells or to recharge the sub-surface aquifers.

**What are the advantages of collecting rainwater in the sub-surface acquifiers?**

- No land is required for storage
- Ground water is not exposed to harmful pollution or evaporation
- It reduces top soil erosion

**What is Rooftop harvesting?**

The roof acts like a collector of rainfall. The rain water can be run into storage tanks from the drain pipes and be used after filtration. Rainwater does not get contaminated if stored and sealed in a sunlight and air free sump or tank. This water will remain contamination free and the storage tank needs only an annual maintenance.

**How much rooftop area is required? What size of storage capacity is needed?**

1000 sq. ft. area of roof and a 6000 litre sump is sufficient.

**What specifications are required for storage?**

**Storage in Tanks**

is being developed by Himanshu Parekh using a perennial reed, which acts as a bioreactor when planted in a porous gravel bed.

Is it mandatory for homeowners to harvest rainwater?

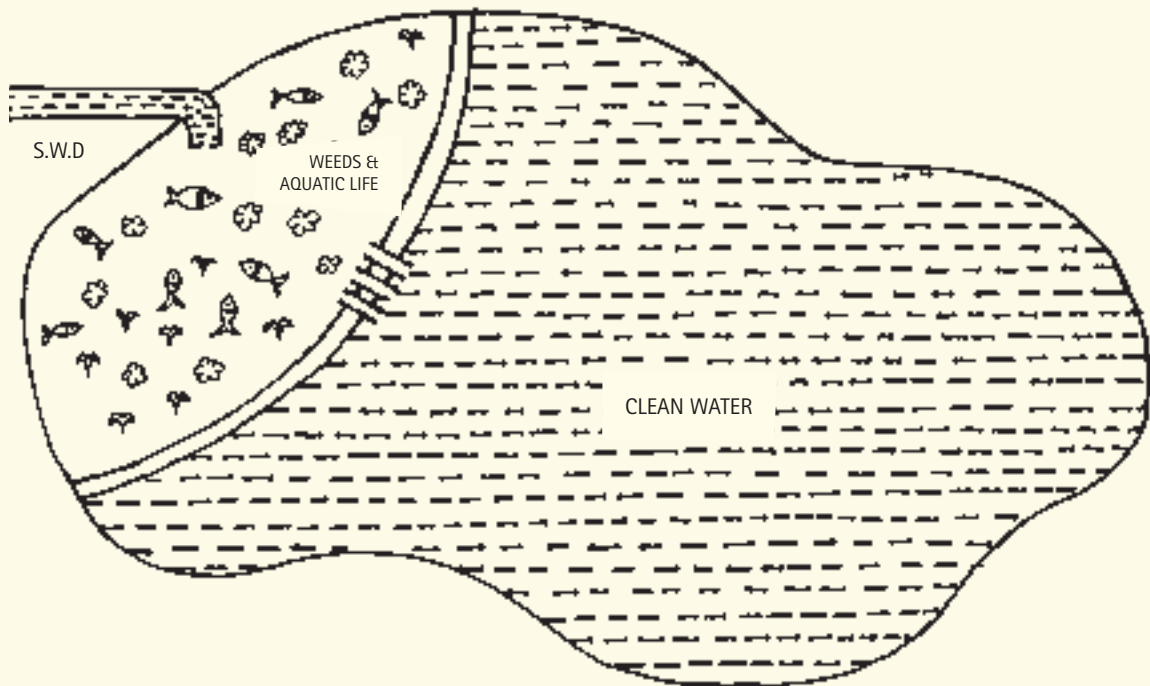
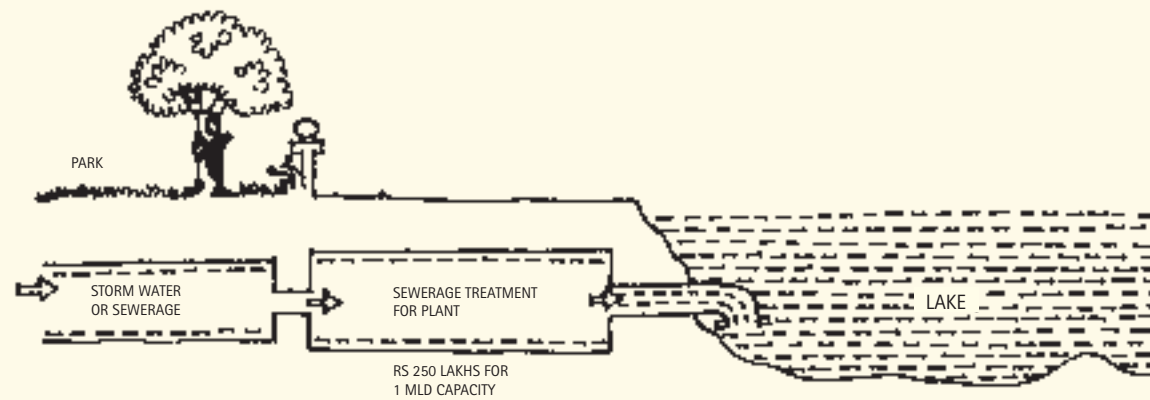
For all new construction, under the state law, harvesting rainwater is now mandatory.

Who are the specialists in Rainwater harvesting techniques?

- The Regional Director  
Central Ground Water Board, South Western Region,  
R.K.E. Trust Building,  
31st Cross, 11 Main,  
4th Block, Jayanagar,  
Bangalore- 560 011 (Karnataka)  
Email:rdswr@cgwaindia.com
- Rainharvester’s Club in Bangalore  
Voice mail : 354 1690  
Email: chitravishwanath@vsnl.com
- Centre for Science and Environment in Delhi  
Director Sunita Narain  
Voice mail : 26083394  
Email: sunita@cseindia.org, wwwcseindia.org
- The Rain Centre in Chennai  
Provides quality test kits as well as advice on rainwater harvesting techniques







### What does it cost to restore and rejuvenate a Lake?

The unit cost involved in restoring a lake is as under:

Cost of restoration/hectare

I. De-silting: 10, 50, 000

What are the common problems to the issue and how they can be addressed?

The most common problems are in the rows in the worksheets. A set of solutions are provided in the columns, with markings for the relevant solutions for each problem. Some solutions may be obvious, but they are marked for completeness. Additional problems or solutions may be added.

Matching solutions to problems

|     |                                      | POSSIBLE SOLUTIONS                                                                           |                 |                                  |                                      |                                                       |                                              |                              |                                    |                               |                             |                |                            |                                                             |
|-----|--------------------------------------|----------------------------------------------------------------------------------------------|-----------------|----------------------------------|--------------------------------------|-------------------------------------------------------|----------------------------------------------|------------------------------|------------------------------------|-------------------------------|-----------------------------|----------------|----------------------------|-------------------------------------------------------------|
| No. | Problems                             | Policy requiring revival of dried lakes/ tanks & preventing construction on lake / tank beds | Rejuvenate lake | Wetland treatment of storm water | Provide sewage water treatment plant | Silt / sediment barriers at storm water drain outlets | Find innovative solution for perennial water | Introduce biodiverse species | Build embankment w /stone pitching | Build fencing to protect lake | Build jogging /walking path | Fix lamp posts | Ensure regular maintenance | Vigilance by citizens to prevent misuse & disposal of waste |
| 1   | Lake/tank beds used for construction |                                                                                              |                 |                                  |                                      |                                                       |                                              |                              |                                    |                               |                             |                |                            |                                                             |





**Can BMP and the citizens’ work together on controlling the adverse problems related to the Storm Water Drains?**

In order to maintain a good drainage system within the city, the following points are important:

- All constructions, whether private or public, must not encroach on low-lying waterways or drain paths.
- Care must be taken to prevent silting due to disposal of construction debris.
- New constructions must be monitored to prevent upstream or downstream flooding.
- Unwarranted acceleration of erosion due to various land development activities must be controlled.
- No new construction should be permitted until temporary or permanent erosion prevention and sedimentation control management practices are implemented and are operational to the BMP’s satisfaction. BMP must be vigilant in stopping stop constructions that do not have erosion prevention and sedimentation control measures.
- Construction in floodplains should be done in a manner that protects or enhances storm water quality and promotes land and tree conservation.
- Sewerage drains from dwellings must not be let into storm water drains.

**What are the actions that can be taken by BMP and the citizens in relation to the following?**

- a) Development in flood prone areas;
- b) Solid waste disposal into the storm water drains;
- c) Cross drainage (and services in drains);
- d) Sediment transport;
- e) Flooding of low lying areas; and
- f) Sewerage system constructed inside the drain.

**Development in flood prone areas:**

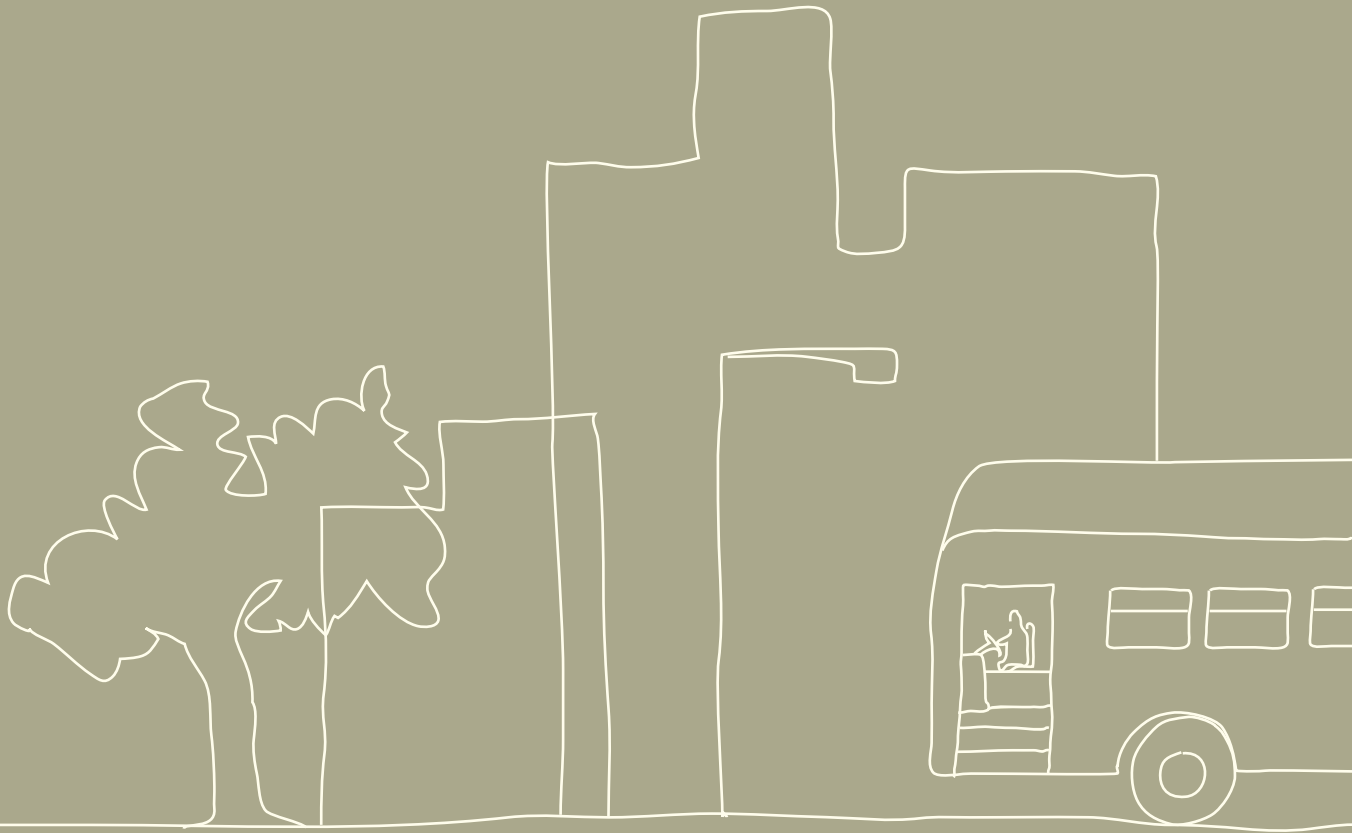


What are the common problems to the issue and how they can be addressed?

The most common problems are in the rows in the worksheets. A set of solutions are provided in the columns, with markings for the relevant solutions for each problem. Some solutions may be obvious, but they are marked for completeness. Additional problems or solutions may be added.

Matching solutions to problems

|     |                                          | POSSIBLE SOLUTIONS                  |                                      |                                           |                                      |                                            |                                 |                       |                  |                     |                       |
|-----|------------------------------------------|-------------------------------------|--------------------------------------|-------------------------------------------|--------------------------------------|--------------------------------------------|---------------------------------|-----------------------|------------------|---------------------|-----------------------|
| No. | Problems                                 | Ensure proper disposal of all waste | Monitor door-to-door garbage pick-up | Block all sewerage lines let into the SWD | Levy fines to violations on disposal | Construct silt traps and sediment barriers | Maintain SWD on a regular basis | Repair or reroute SWD | Resize SWD width | Resize SWD at inlet | Reroute service lines |
|     |                                          | 1                                   | 2                                    | 3                                         | 4                                    | 5                                          | 6                               | 7                     | 8                | 9                   | 10                    |
| 1   | SWD overflowing, causing flooding in low |                                     |                                      |                                           |                                      |                                            |                                 |                       |                  |                     |                       |



# infrastructure services

- 01 Water and sewerage
- 01 Roads footpaths and drains
- 01 Solid waste management
- 01 Public transport
- 01 Street lighting
- 01 Parking
- 01 Public toilets









What are the common problems to the issue and how they can be addressed?

The most common problems are in the rows in the worksheets. A set of solutions are provided in the columns, with markings for the relevant solutions for each problem. Some solutions may be obvious, but they are marked for completeness. Additional problems or solutions may be added.

Matching solutions to problems

|     |          | POSSIBLE SOLUTIONS                     |                       |                      |                                   |                           |                                              |                                                  |                                   |                                     |                         |                                                |                                                                      |
|-----|----------|----------------------------------------|-----------------------|----------------------|-----------------------------------|---------------------------|----------------------------------------------|--------------------------------------------------|-----------------------------------|-------------------------------------|-------------------------|------------------------------------------------|----------------------------------------------------------------------|
| No. | Problems | Inform appropriate agency/ Suchimithra | Monitor waste pick-up | Remove concrete bins | Awareness drive on managing waste | Ensure h'hold segregation | Set up community-led local composting system | Set up system for management of recyclable waste | Penalize illegal dumping of waste | Monitor waste disposal as per norms | Monitor street cleaning | Penalize violations in disposal of toxic waste | Community monitoring to prevent dumping in vacant sites/roads/drains |
| 1   |          |                                        |                       |                      |                                   |                           |                                              |                                                  |                                   |                                     |                         |                                                |                                                                      |









Who should citizens contact for concerns about the roads, footpaths and drains?

For problems related to local infrastructure the ward engineering department can be contacted.  
For larger issues, the zonal CE and DC will give answers.

| Division         | Executive Engineer | Telephone |
|------------------|--------------------|-----------|
| Malleshwaram     | Muninagappa        | 3564819   |
| Mahalakshampuram | Sai Kumar          | 3324547   |
| Rajajinagar      | Puttamaligaiah     | 3324547   |
| Gandhinagar      | Kareem Ullaa Khan  | 3346520   |
| Binnypet         | MB Srinivas        | 2238294   |
| Chandra Layout   | Rangaraju          | 2238294   |
| Basavangudi      | N Krishna          | 6562938   |
| Jayanagar        | Ragavendra Rao     | 6562938   |
| Shanthinagar     | Bt Ramesh          | 5582651   |
| Shivajinagar     | Nagendrappa        | 2265219   |
| Bharathinagar    | Syed Hafiz         | 5582651   |
| Ganganagar       |                    |           |



Section 3.3 Road Drainage

(along the length of the road)

If not applicable, tick here and go to the next section ☐

| Side A                                                                                          | Existing                             | <input type="checkbox"/> Yes     | <input type="checkbox"/> No |
|-------------------------------------------------------------------------------------------------|--------------------------------------|----------------------------------|-----------------------------|
| Type of construction                                                                            |                                      |                                  |                             |
| Masonry                                                                                         | <input type="checkbox"/> Stone slabs | <input type="checkbox"/> Kutchha |                             |
| Does the Side A drain hace Cover Slabs <input type="checkbox"/> Yes <input type="checkbox"/> No |                                      |                                  |                             |

| Side B                                                                                          | Existing                             | <input type="checkbox"/> Yes     | <input type="checkbox"/> No |
|-------------------------------------------------------------------------------------------------|--------------------------------------|----------------------------------|-----------------------------|
| Type of construction                                                                            |                                      |                                  |                             |
| Masonry                                                                                         | <input type="checkbox"/> Stone slabs | <input type="checkbox"/> Kutchha |                             |
| Does the Side B drain have Cover Slabs <input type="checkbox"/> Yes <input type="checkbox"/> No |                                      |                                  |                             |

Conditions of Drains

|                                                                     |  |  |  |  |  |  |  |
|---------------------------------------------------------------------|--|--|--|--|--|--|--|
| Number of points of water stagnation in drain due to improper slope |  |  |  |  |  |  |  |
|---------------------------------------------------------------------|--|--|--|--|--|--|--|



















































































