CAPABILITY ASSESSMENT AS A PREREQUISITE TO DECISION MAKING

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The decision to develop a parcel of land for urban use has been based, in the majority of cases, on the land "being there", rather than the attributes of the land being suitable for a particular use. Historically, a decision to develop a parcel of land has simply been made on the premise that the land adjacent to the last development was available. No capability assessment of these parcels of land was undertaken.

With the development of environmental awareness in the late 1960s, developers were forced to look more closely at their land prior to approval for development, and to preserve areas within the development as "open space". The minimum percentage of open space was laid down by law but could include drainage lines, small unusually shaped areas, and natural features, such as swamps.

In addition, there was little co-operation between developers of adjoining land areas. Consequently, developments could take place without the incorporation of large areas of open space, unless the planners were able to have an input into the decision making process. Thus, remnants of areas developed were small areas unsuitable for retention as natural areas.

G. Tyler Miller, Jr., in his book "Living in the Environment" has identified a number of goals that aim at preserving a rich diversity of spaces that match the diversity of human needs. These include:

- Aesthetics - preservation of visually pleasant and beautiful places
- Establishment of recreation areas
- Preservation of unique historic or cultural sites
- Provision of physical and ecological buffer zones between and within urban areas
- Provision of habitats for birds and other forms of wildlife that can live in or near urban areas.

To achieve the goals, the areas suitable for preservation must be identified as the first step. To achieve the identification of these

areas, an assessment of the physical attributes of the total area (on a regional basis) must be undertaken. This is capability assessment.

Capability Assessment

Capability assessment is the identification of the physical attributes of an area and the assessment of the effect each attribute, either individually or in combination, will have on the development of a particular parcel of land.

Various methods are available for capability assessment. Aerial photographic interpretation with field checking may be used to produce reconnaissance level assessments. More detailed surveys can then be undertaken on the areas that appear suitable for development. The detailed surveys, undertaken at mapping scales between 1:5 000 to 1:25 000 usually involve intensive field surveys.

Attributes which require identification include:

- Geology, landform, soils
- Contemporary geomorphic processes
- Fauna and flora
- Surface and groundwater hydrology
- Historic sites
- Archaeological and ethnographic sites
- Current regional land use

With the collection of this base data, an assessment can be made of the capability of that land parcel. Areas that are not suitable for urban development are, therefore, available for uses such as open space or bushland.

The capability assessment can involve the use of map overlay systems such as expounded by McHarg (1969), a matrix system as used in Canada, computer mapping techniques, or simply subjective personal assessment.

McHarg (1969) mapped all the individual attributes using pastel mapping colours for suitable areas and graded to dark colours for those unsuitable. By overlaying the maps, the lighter coloured suitable areas are clearly distinguished among the dark colours. Even within this system, subjective

decision must be made of the relevant value of each attribute in deciding what colour tone should be used. This system, with modification, has been most useful at the regional scale of mapping.

Matrix systems are usually computer programmes that are complicated and require "weighting" of attributes. These systems are not perceived to be suitable at the local scale for use by councils or developers. Computer mapping is also generally beyond the scope of council capability. Subjective personal assessment is the most widely accepted and used method. An individual's assessment should always be followed up by round table discussion to achieve a balance between the ideas and requirements of both planners and users.

The capability assessment procedures therefore identify those areas suitable for conservation, active and passive recreation, residential, and commercial or industrial uses. It is the areas which are identified as being suitable for conservation and passive recreation in which we are interested.

The assessment of land capability on the broad scale is advantageous to local councils which administer these small bush areas. The principal attributes of the areas have been identified and councils are then able to carry out more detailed surveys according to their requirements. The capability assessment is able to place each bush area in the regional setting such that pressures that may not be identified at the local level can be identified at the regional scale.

Conclusion

For too long, small bush areas simply have been formed from the "leftovers" of urban development. The identification and assessment of capability of land for use as small bush areas must take priority over ad hoc development strategies.

References

McHarg, I.L. (1969). Design with Nature. (Falcon Press : Philadelphia).

Miller, G.T. Jnr. (1975). Living in the Environment. Concepts, Problems, and Alternatives. (Wadsworth: Belmont, Calif.)