

Our visual landscape Managing the landscape under special consideration of visual aspects

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Abstract

Comprehensive landscape valuation requires an integration of ecological, economical and social values. Landscape image does not only comprise its spatial and structural parts but also the formal visual and cultural aesthetic expression of the landscape. In accordance with this holistic image of the landscape the manifestation of these special elements and visual functions is reflective of the natural and cultural coherence and beauty of long functioning natural and cultivated landscape systems.

Landscape image and identity on the one hand and its natural or cultural variety (singular appearances of elements, local peculiarities or particulars) on the other hand are the most important criteria for evaluation, classifying and protecting against possible impacts on the local and regional landscape.

However, in addition to the desirability of preserving existing landscape identity, the protection of existing elements, space and functions should not blindly rule out the possibility of new developments emerging with new values.

Based on this basic idea value ranking of landscape features and individual expression of partial image sectors can be performed on the level of ecological and sustainable land use and planning culture. In landscape planning it is recognised that such a ranking requires a combination with professional judgement, informed opinion and public preferences as well.

To ensure the aims of preservation and development of a high-quality nature and culture beauty special methods of analysis and demonstration of the landscape structure and image are requested. The demonstrated methodical steps should correspond to the objective of a sustainable nature and landscape preservation and development on an aesthetic landscape planning level with guidelines and helpful data for the impact assessment and intervention rule (German nature conservation act).

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1. Introduction and concepts

A landscape can change significantly with or without being influenced by man. Examples of natural causes are varying sea levels, earthquakes, storms or

changes in the vegetation layer which happen slowly or all of a sudden with a disaster. During the past centuries, human activities have increasingly caused alterations of the landscape partly by intended and direct war, mining, settlement, agriculture, transportation in infrastructure, etc. The change of the landscape character by wind energy stations will be explained instead of other kinds of impacts by use of alien

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building forms or by creation of new structures or activities, etc.

The methodical frame and the steps necessary for analysing a site with regard to the sensitivity of its image attributes and need for protection have to refer and outline.

- Delimiting landscape units with a characteristic configuration of space, structural elements (topography, water, vegetation, colonisation) and their landscape mosaic pattern.
- Differentiating between macro, meso, microstructure within a single landscape unit (the image of which can be isolated according to spatial aspects and scenery building blocks).
- Determining the conservation-demands and sensitivities for certain types of interference and impairment.
- Examining the degree of impairment caused by a proposed development and showing ways to avoid, minimise and compensate considerable and sustainable impairments.

Landscape planning therefore ought to be formulated in a way that exceeds simply meeting the requirements of nature conservation and building regulations, it should rather be considered an important part necessary for the success of the agenda 21 process.

Using the following references, methods and criteria landscape architects should be able to take up a significant role in monitoring the communal action procedures.

2. Background of landscape identity valuation

Despite a considerable variety of general and expert interpretations, a comparison between different approaches allows the following definition — landscape scenery expresses the concrete and characteristic products of the interaction between human societies and culture with the natural environment. As such, landscape features can be identified as spatial units where region-specific elements, subjects and processes reflect the immobile structure and the dynamic ecosystem with typical alterations.

So, units of landscape expression have been defined on the level of nature systems and cultural identity for

Germany by Krause and Adam (1983), in this survey the character of the feature can vary within the landscape unit.

According to the high diversity of landscape types various methods for the description, evaluation and impact assessment have been developed. Numerous publications on this topic from single elements (Feller, 1981) to the complexity of urban, peri-urban and rural appearance of landscapes are published (Adam et al., 1989).

The totality of natural and cultural landscape is the subject of evaluation processes in Krause and Adam (1983); Krause and Kloeppe (1996).

Such approaches are based on the idea that each landscape is worth being protected, even if one only finds residual attributes of its natural space and adapted forms of culture. Following this, landscape structure can be distinguished between nature and technical expression (Fig. 1). An adequate reference scheme for landscape valuation is feasible on the level of units (Fig. 2, big white line for main unit; thin white line for compartmental units in accordance with the visual character of the main unit).

3. Perception of the spatial landscape structure and consequences for landscape planning in relation to visual qualities

The local landscape image consists not only of its spatial and structural parts but also of the formal expression of the landscape's general spatial character in an area or a region. It reflects the characteristics of natural and cultural space and the variety and beauty of a long-term operating natural and cultivated landscape. These are the most important standards for evaluating and classifying the landscape-related aesthetic qualities of a site. In addition to this, there are local peculiarities or particulars. These should correspond to the objective of a sustainable nature and landscape protection.

Landscape planning is taking place on all levels of spatial planning, including the making and supervision of development planning. It is setting the scale for a sustainable utilisation. Other environment related planning disciplines can align with it, such as water management, agricultural planning and forestry. Landscape planning makes a substantial contribution

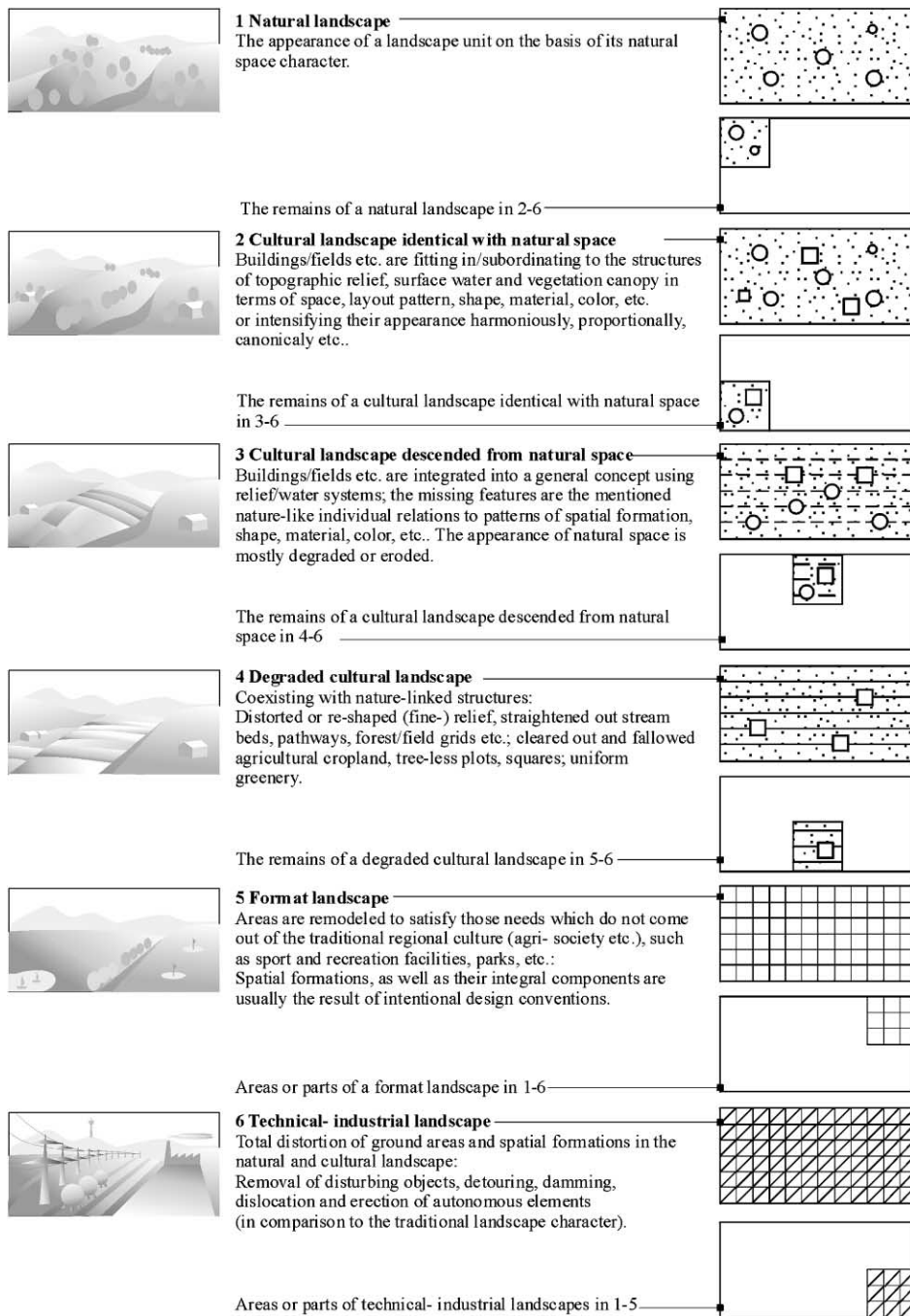


Fig. 1. Landscape classification according to appearance between nature and technology.

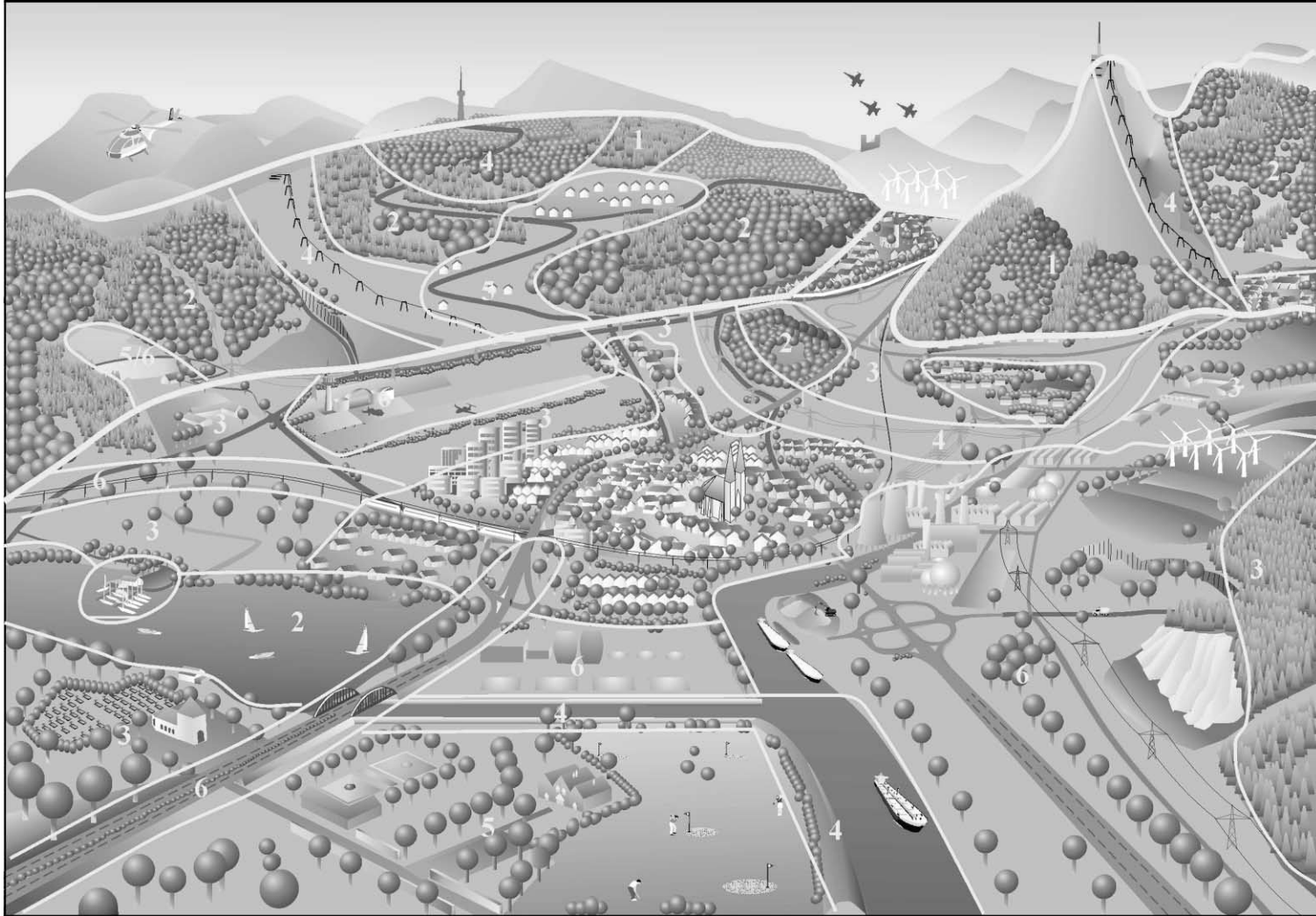


Fig. 2. Structure of the complex landscape image according to its natural features and degree of cultural development as well as technical–industrial remodelling.



Fig. 3. A model. Visually effective correspondence-areas of the landscape.

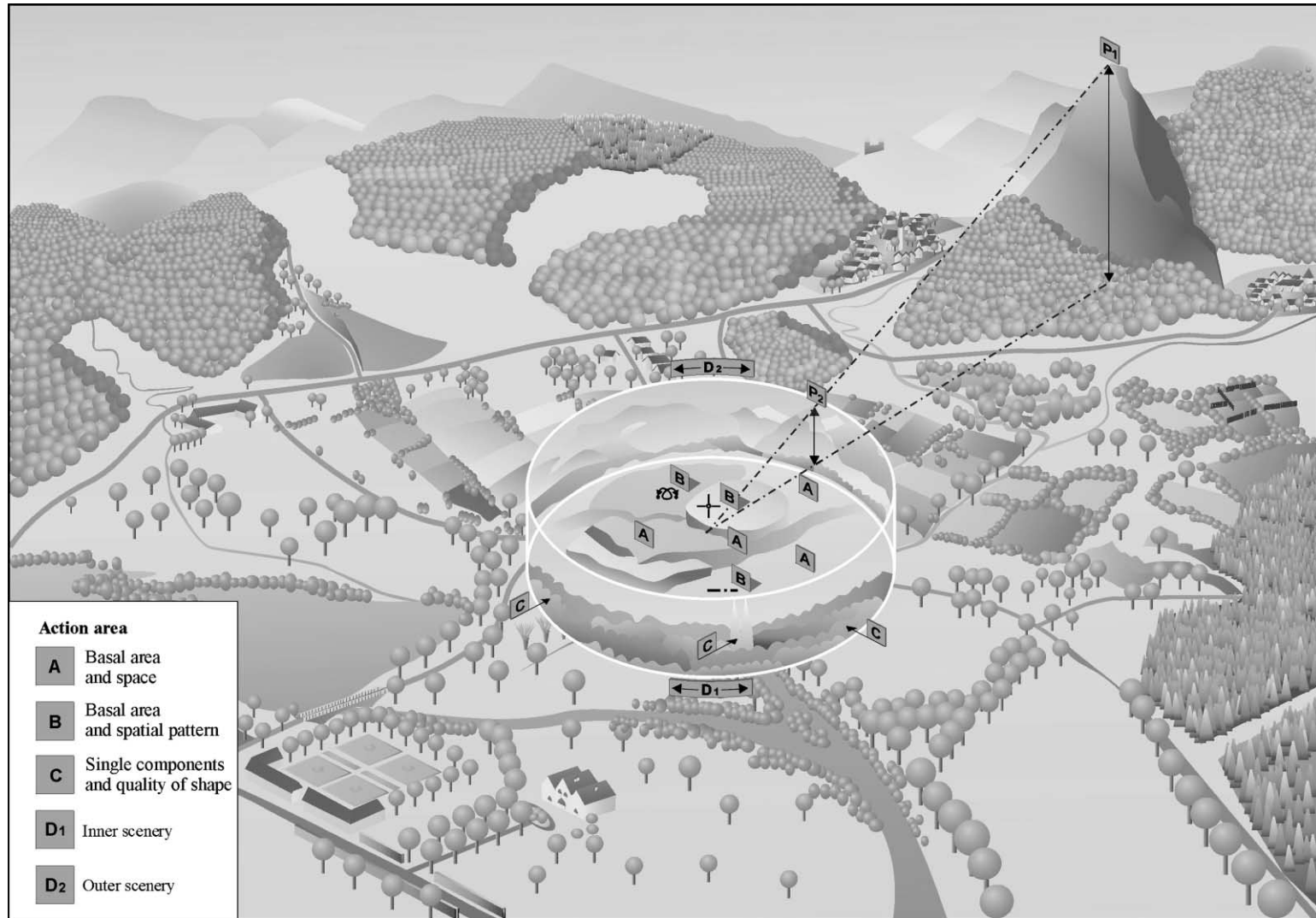


Fig. 4. Integrative and complex sets of interaction in the landscape image.

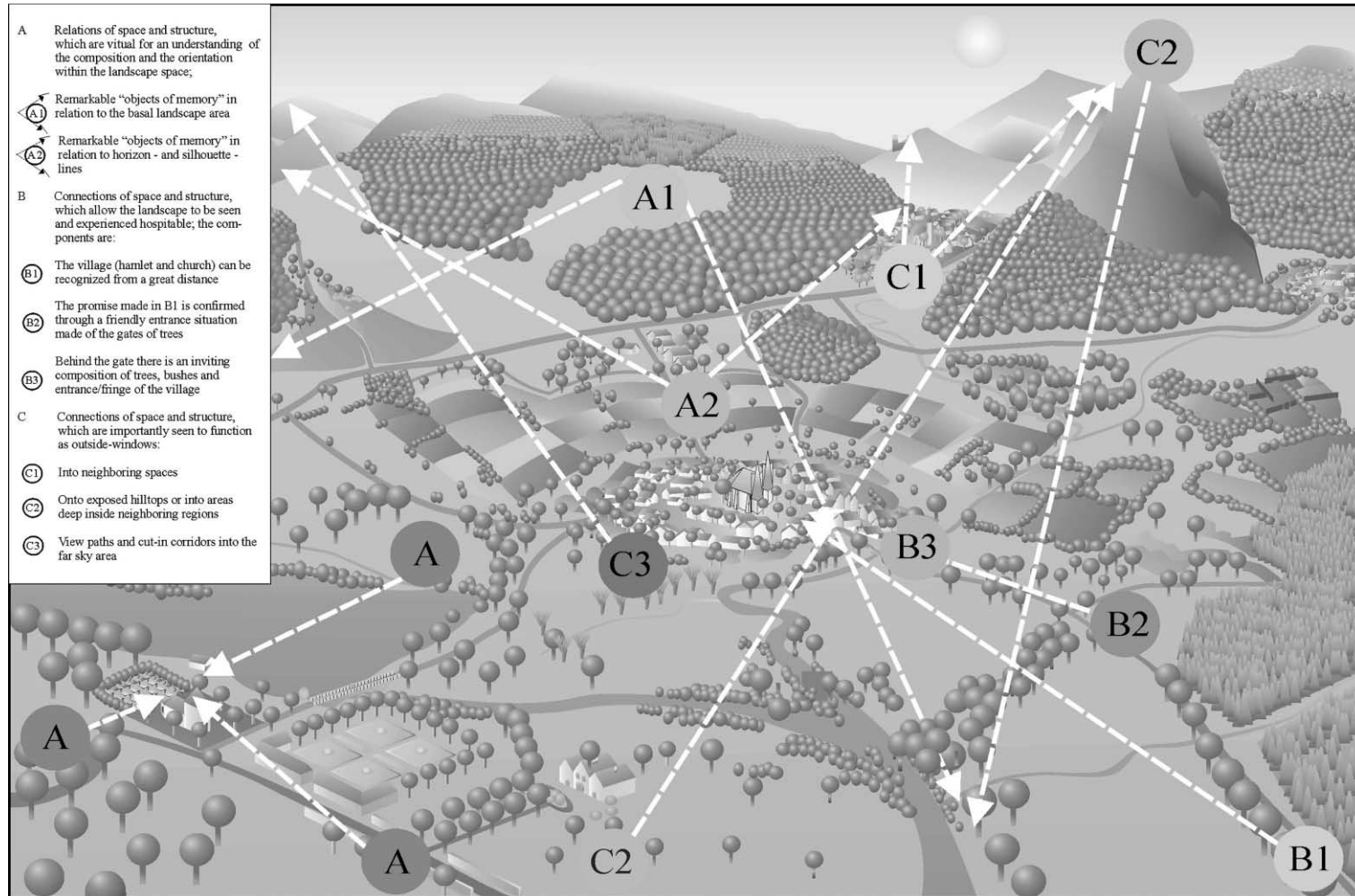


Fig. 5. A model. Impairments on the local landscape image penetrate neighbouring regions along view axes and spoil the wide-ranging enjoyment of landscape.

to the supervision of a spatial utilisation, that is compatible with nature, environment and landscape.

Therefore, landscape planning is the planning instrument to put the targets of the nature conservation act spatially into practice. It comprises all phases of spatial planning from targeted stock taking and evaluation, formulation of spatial models, qualitative

aims and objectives to proposed actions and the monitoring during realisation and success-balancing.

3.1. Planning consequences

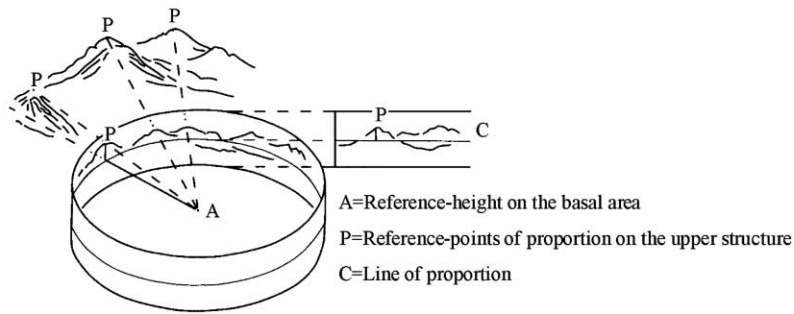
The protection of any particular landscape image can only be effectual, if not only just the single

1) Characteristic features

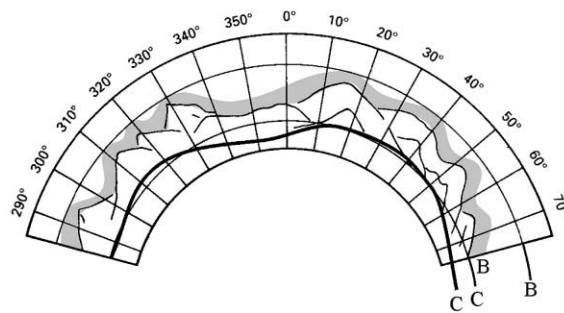
The configuration of the side panorama provides a line of proportion, which substructures the image in relation to basal area (lower structure) and horizon (upper structure).

2) Measurement of spatial distance

The stronger the lower structure, the greater the mass-attraction of wind power stations; the clearer the proportion (P), the greater its sensitivity for disturbances by a new accentuation of P.



Strip panorama on a cylinder coat



Circle panorama with bent and curved line of proportion (C), horizon, line of tied view (B) and touch-sensitive bordering belt

3) Sensitive attributes and areas with distance requirement

Vertical distances have to be kept to avoid sensitive areas of the upper structure and keep the proportion of points P.

Fig. 6. Shape gradation of individual elements: changes in growth and incremental increase due to the observer's spatial approach.

Construction of a block drawing

1. Determination of the relevant plan section
2. Construction of a perspective grid
3. Transfer of contour-lines into the perspective drawing
4. Determination of a scale for height (consider over-heightening)
5. Transfer of perspective contour-lines into heights (3rd dimension)
6. Finishing of block drawing

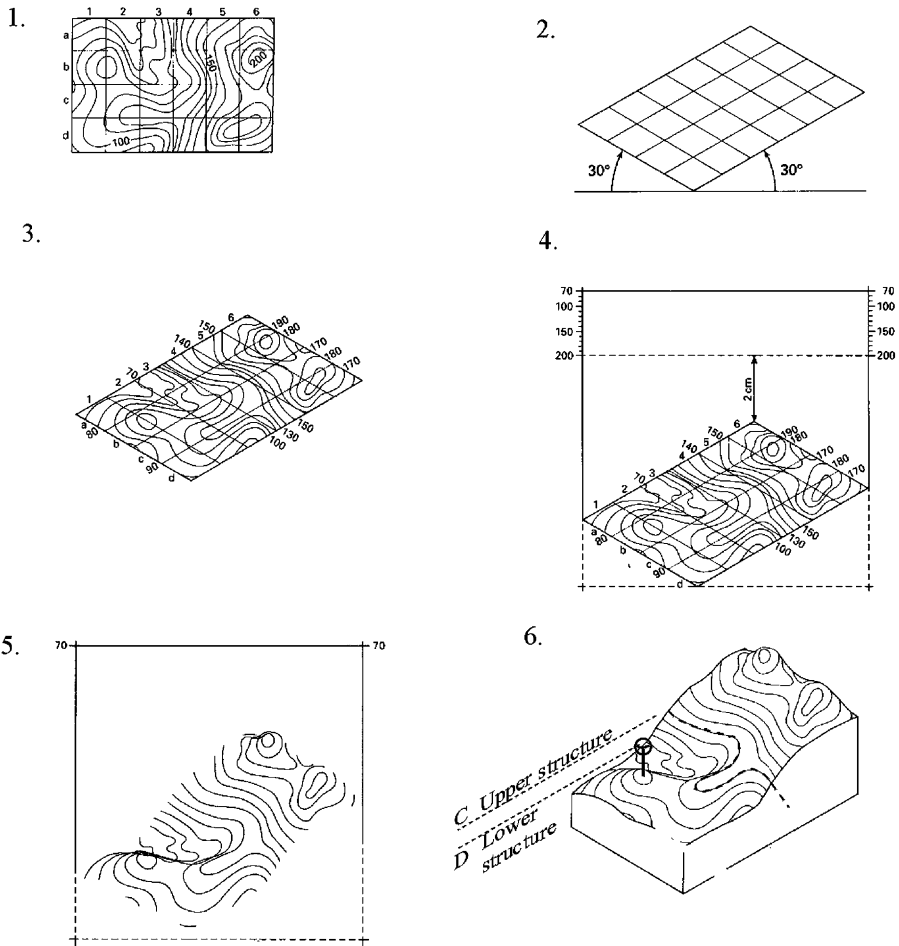


Figure of proportions

Contour-lines as:
 C= Line of proportion
 D= Upper limit of tied view area

Fig. 7. Scheme of proportion and harmony regarding landscape extent and shape.

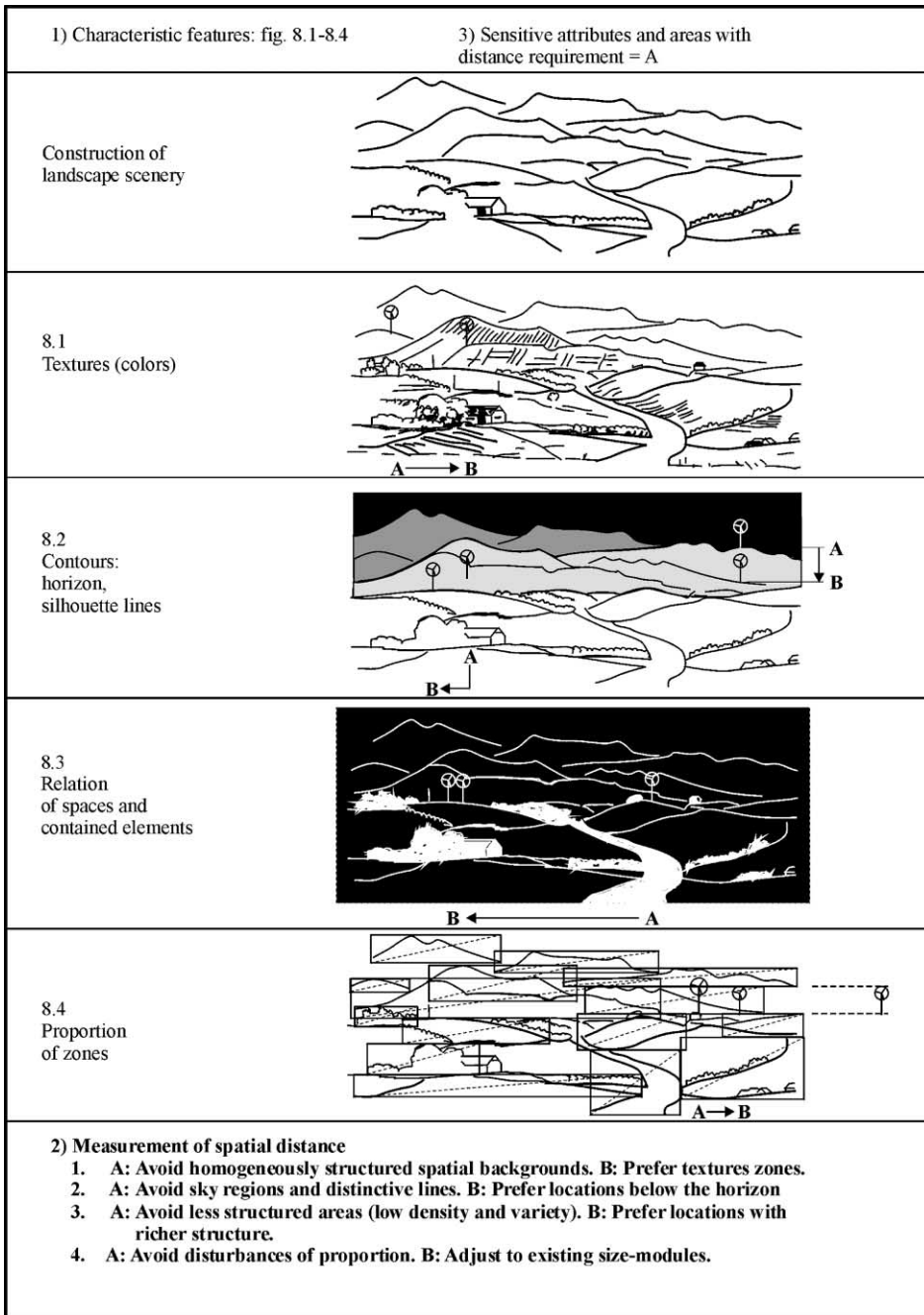


Fig. 8. Types of scenery: multi-functional implications for spatial distribution, orientation, affirmation of identity between action, complementary and reference-area.

elements and structures are taken into account but also the configuration of the wide-ranging spatial pattern and interconnection (Fig. 3).

In order to evaluate the impairment on the landscape image one has to examine more than just the single components of its appearance. Therefore, the landscape's overall character and specific nature have to be described also by integrative image functions and structural facts. In the activated landscape it is not just features of composition that become significant but biodynamic aspects and aspects of change, too (Fig. 4).

4. Impairment of coherent features

The essential characteristics of a truly coherent landscape is a state where all functions and processes are irreplaceable parts of its internal 'unity', a condition which is often regarded as harmonious in time and space. Such coherence can be affected by certain types of urbanisation, by the use of alien-building materials, or by the creation of new structures or activities that are intrusive or disruptive of the landscape. Large tracts of traditional European landscapes have

Biodynamic distance

Definition:

The biotic areas are giving off active components into the surroundings. These neighboring zones (up to a certain expanse) have to be functionally included into the landscape unit at issue.

Reasons for distance keeping

The life impulse and active elements must be saved from destruction or impairment through interfering trigger-effects caused by wind power stations (shadow/flicker effects, turning functions, blinding, sound and body resistance).

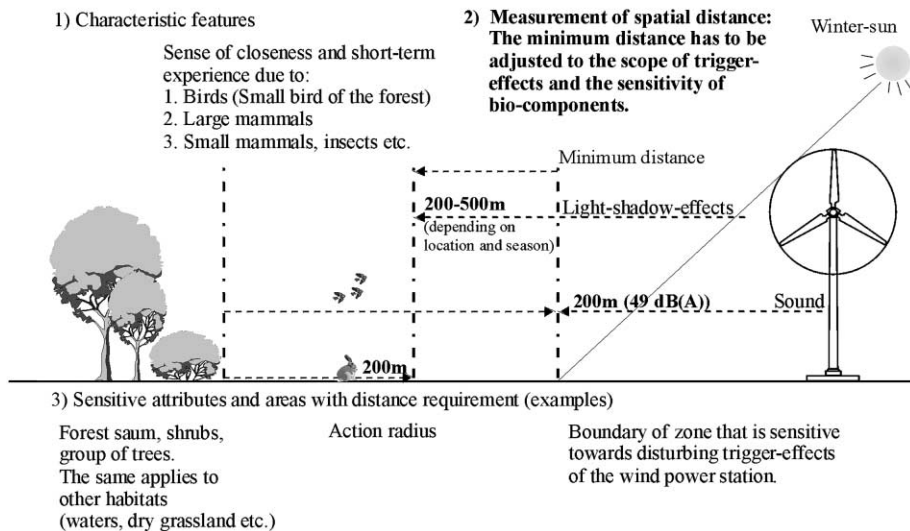


Fig. 9. Biotic and other dynamic components: evolution, life impulse, sensory stimulus and cognitive indication of the ecosystem's capability to survive.

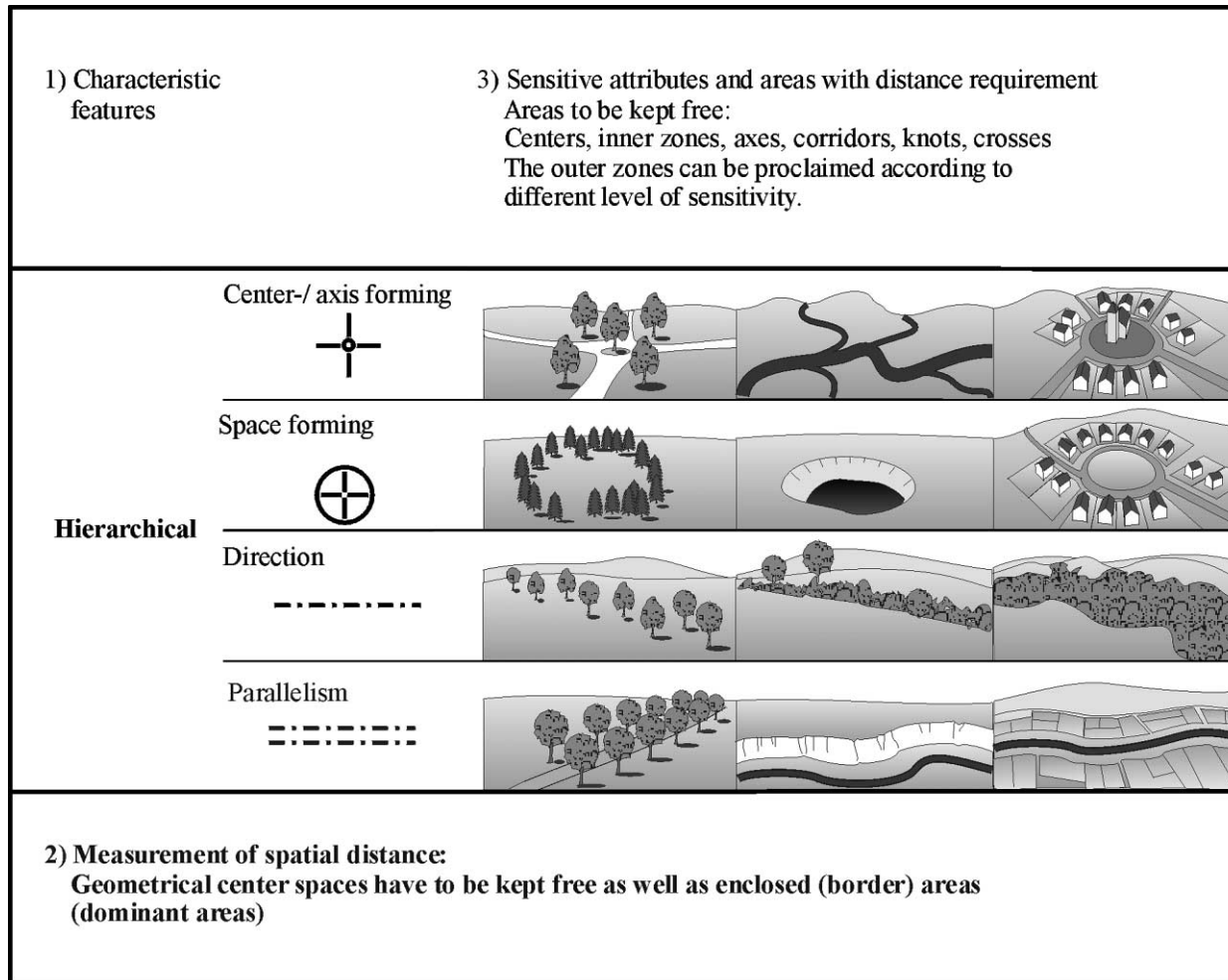


Fig. 10. Distribution and dominance of structures on the basal area.

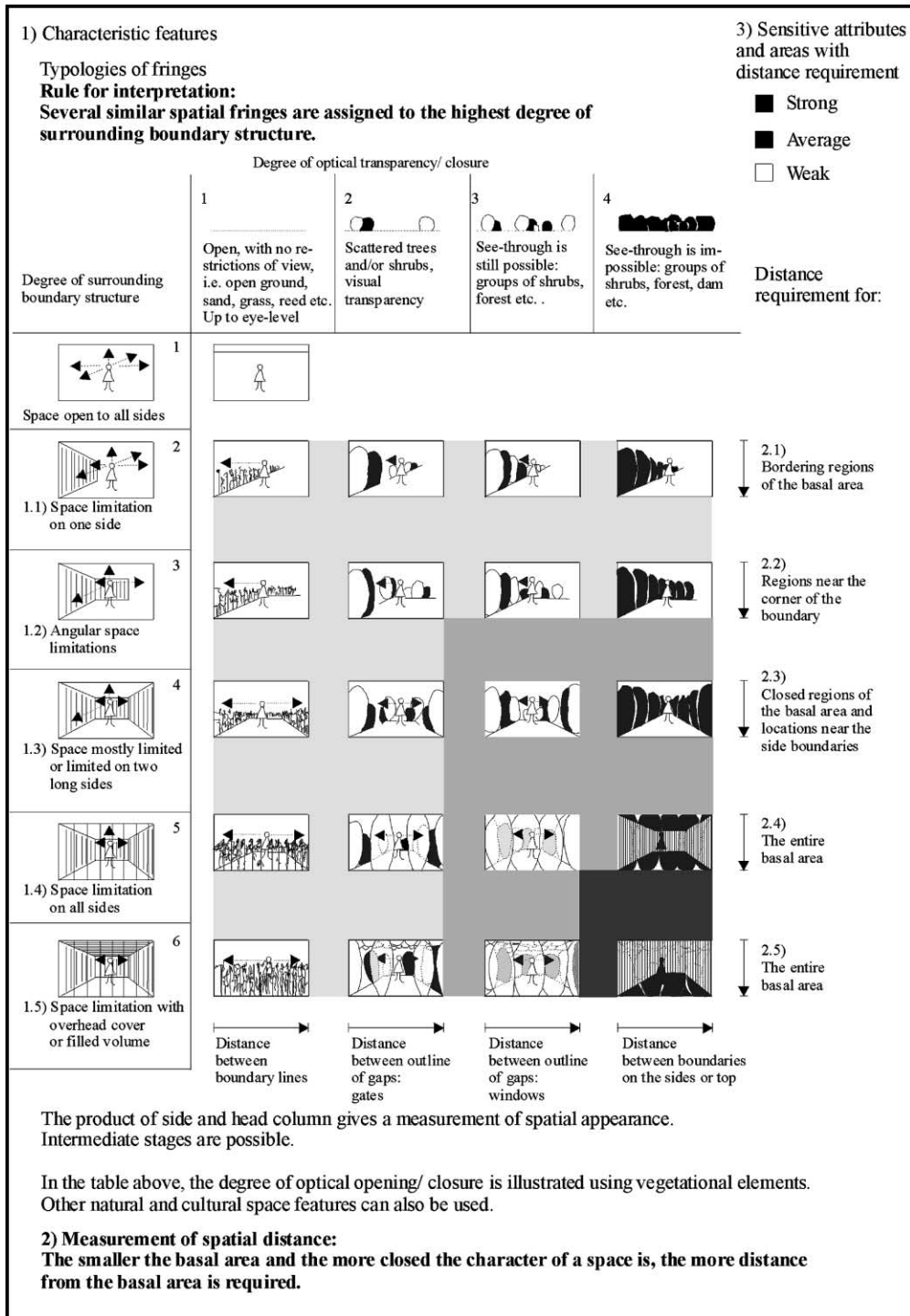


Fig. 11. Spatial relations and variability of the landscape image in the vegetational modification cycle.

fortunately, retained a relatively high level of coherence (Wascher et al., 1999).

Local impacts can impair the visual and aesthetic value of parts or the entire structure of neighbouring sites, by spoiling the outstanding beauty over view

axis. Visual information and aesthetic influences from outside can be interrupted or affected (Figs. 5 and 6).

The methodical approach to analyse and evaluate the degree of impairments by wind mill power plants is shown in Figs. 7 and 8.

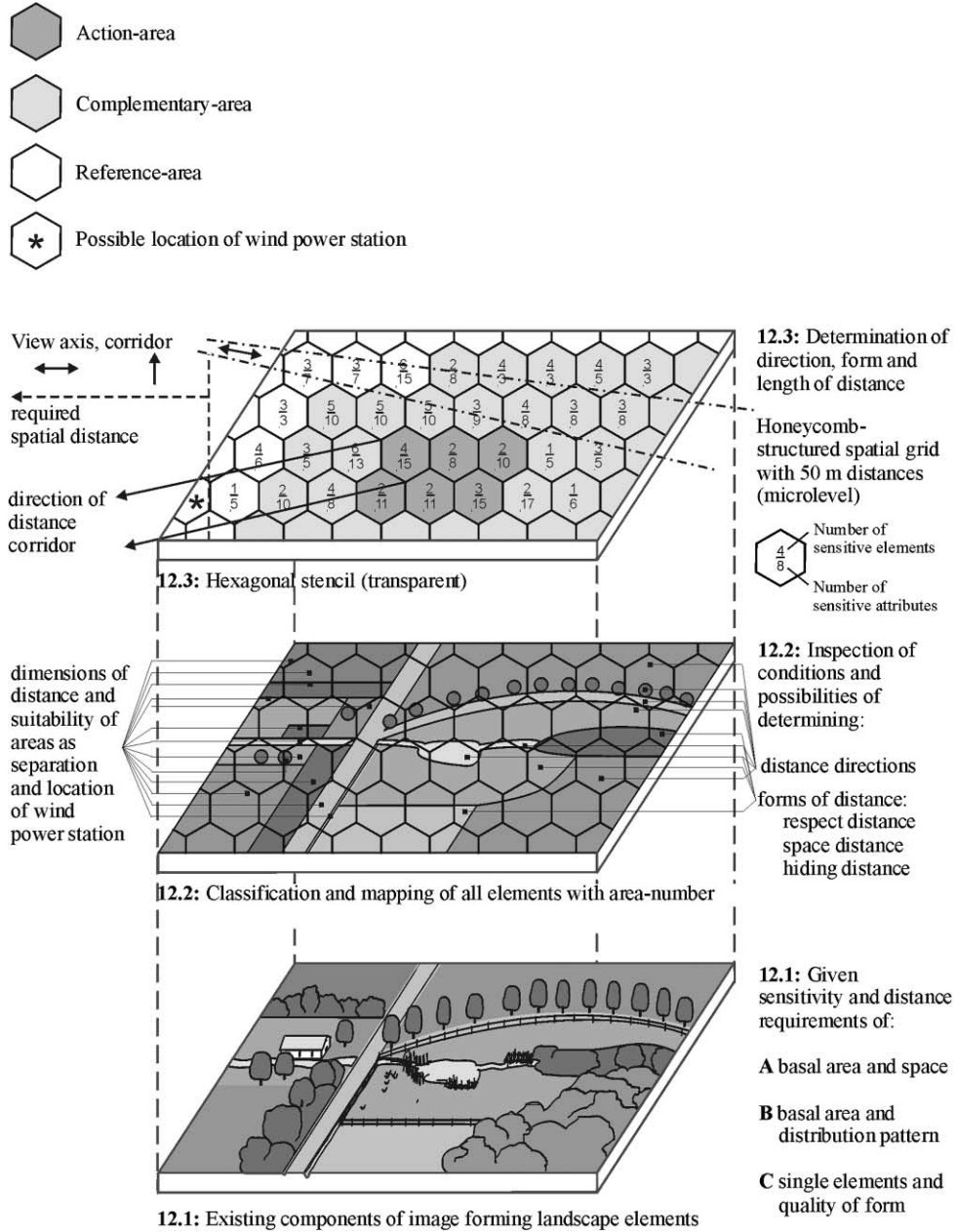


Fig. 12. Systematic search for alternative locations using spatial distance, hiding the wind power stations or minimising their impact by distance.

5. Impairment of the local natural and cultural identity, singular features and diversity

The value of a landscape is expressed by the general presence of nature (wilderness), historic and other cultural features, providing a sense of cultural–historical continuity (specific land uses, field patterns, traditional architecture, etc.). This quality often has more to do with feeling and knowledge than visual perception alone. The diversity of natural and cultural impressions in the local area makes this category of qualities specific for different units.

Local areas are sometimes strongly marked and perceived physically, visually or culturally, by individual physiognomies such as a particular landform, a special building, a historical landmark. Such features can be small, yet serving as “attractors” to the wider landscape context. Old trees, virgin woods or rare habitats between fields and gardens can be typical examples. Fig. 9 shows a biotic landscape element that may be located in the neighbourhood of a town and provides numberless basic experiences with nature for children and adults, too.

Diversity within landscapes can be an important quality aspect. So it is worth recognising the presence and expression just as in biodiversity or in the different appearances of soil, rocks, water, etc.

Fig. 10 demonstrates the variety of such and other landscape elements as structures with a typical and identifiable local physiognomy. Nevertheless, just as in different elements, diversity within landscape spaces can be an important quality aspect that is worth being respected in impact assessments and landscape planning (Fig. 11).

6. Blending or searching alternative locations for alien buildings as wind power plants

Today already, efficient stock-taking and evaluation as components of landscape planning are making it an essential basis for environmental impact assessment, as well as the evaluation of consequential impacts and interventions in nature and landscape. It complies with the requirements of a planning–environmental impact assessment.

Wind power stations can scarcely be matched to the existing image of a landscape because of their tech-

nical–industrial character and appearance, just for instance in places with missing or degraded landscape elements of its formerly natural appearance or in technically remodelled locations without any spatial and optical connections to the outside. The starting-point for a solution is given by the function of spatial distance from sensitive units of the landscape image. In that case the alternative location has to be far less vulnerable.

Fig. 12 shows systematic search for alternative locations using spatial distance, hiding the wind power stations or minimising their impact by distance. Additionally, limited possibilities should be explored regarding the reduction of specific trigger-effects.

7. Conclusions

The change of landscape is characterised by urban culture. If one was to judge the future image of the landscape, undeveloped as nowadays, by mono-cultural sectors living, working and enjoying the land, the picture would appear rather unfavourable. Actual development is nevertheless still dependent on our visions and how we transform past experiences into a new life in harmony with nature.

A few concrete starting-points towards a new orientation are given in the following.

- Ascertaining the value of ecologically and aesthetically favoured landscapes by reference numbers of use, existence, options and heritage. Consideration of this general ecological value for the good of landscape aesthetics in environmental compatibility tests and profit–cost-analysis of projects in the fields of energy supply, traffic, tourism and production facilities.
- Improving the quality of life and leisure in our villages, towns and landscapes by regaining their characteristic features and special aesthetic qualities and thus making them lively, unique and endearing. This may, under certain circumstances also help to reduce the constantly increasing urge to travel (Krause and Langer, 1999).

Landscape planning has to be worked out and realised by qualified experts. The different steps, criteria and methods for the analysis and evaluation are explained using the example of a proposed wind

energy station. The following image aspects and means to avoid impairments by keeping appropriate safety distances shall be introduced exemplary for other conflict solving strategies.

- Sensitive units and spaces of landscape image and distances.
- Mosaic patterns of landscape structures and distances.
- Conflicts of formal identity and distances.
- Landscape image scenery and distances.
- Distances to view axes, corridors and sectors.
- Distances of proportion and shadow lines.
- Distances to safe vitality and the basis for a biological landscape design.

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