Mental health consideration in planning

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Background

The Protocol on Strategic Environmental Assessment (ECE/MP.EIA/2003/3) stipulates the following: "Ensuring that environmental, including health, considerations are thoroughly taken into account in the development of plans and programmes;" (Article 1 a). In Germany, there is a major ongoing debate concerning the German landscape planning process vs. the new SEA process. Some believe that the objectives of landscape planning are already included in the objectives of SEA, and that two parallel processes with such similar objectives would confuse all other involved parties, stakeholders and the general public. Others say that an SEA for landscape plans must be provided in the same way as for any other plan or programme. One reason for this is that, in Germany, landscape plans do not normally include health and cultural aspects, as is stipulated for the SEA. My presentation showed a method of implementing an important health aspect – stress reduction – in physical planning, landscape and spatial planning as well as in EIA for development plans. Stress-related diseases cost a tremendous amount of money in Sweden, around 9 billion Euro, for the country's population of 9 million people. Leading research in this area from the field of environmental psychology has been published during the past 15 years. There is now considerable evidence to support the notion that people reduce their stress significantly when they are exposed to nature and positive landscape values. These findings may be implemented in two ways: First, health care programmes should be created to get sick-listed people back to work earlier by providing them with garden therapy. Second, emphasis should be put on the "healthy side" of the issue, thus on making healthy people even healthier. In other words, how can we improve our mental capacity, become more creative and feel even better? On the basis of this research, we are now able to present new, strong arguments for nature protection and landscape investments.

From this point onwards, environmental concerns should no longer be expressed as a question of development vs. environment, but instead as development as a consequence of a good environment. This may be illustrated by the "rise and fall" of Silicon Valley. At the outset, the area was very attractive. Companies moved there largely because of the good environment, nice landscape attractions and recreation facilities. Now, Silicon Valley is overcrowded and leading companies are moving to new, more serene business park areas, such as those in Portland Oregon or other places. Young and well-educated people wish to settle down in places that offer a nice environment for them and their families, and companies must follow if they require the working capacity of such individuals.

Our experience from the 20th century was that companies chose locations in which they met as few environmental obstacles as possible, and the labour force followed. The trend in the 21st century, however, seems to be the opposite: the attractive labour force first settles down in attractive areas, and the companies must follow. This fact must be discussed when debating criteria for an SEA or EIR or spatial plan or landscape plan, etc.

Relevant scientific results from the field of environmental psychological.

The relationship between the green structure and health in urban areas was illustrated by Ottosson and Grahn (1998). Another investigation shows that a relatively large proportion of people are afflicted by illnesses related to stress (Grahn, P. & Stigsdotter, U., 2003). A third study illustrates the importance of having a park very close to your home (ibid). Persons who visit green areas seem to recover more quickly from stress-related afflictions (Ulrich, 1991). Distance from the home to the closest open green urban area is of great importance for how

often people visit such areas. The further from home you have to walk to find the closest open green area, the more seldom you visit such areas. And the more often people visit such areas, the less frequently they feel stressed, irritated and fatigued (Stigsdotter & Grahn, 2004a; Grahn & Stigsdotter, 2003). A critical distance seems to be 300 metres from home to the nearest open green urban area. However, after only 50 metres, the frequency of visits falls and the level of stress rises (Ibid.).

There is also evidence that different daycare environments have different effects on children's motoric development and concentration abilities (Grahn et al., 1997, 2000). Researchers at the Swedish University of Agricultural Sciences are also studying the importance of the schoolyard environment for children's learning and development (Andersson et al., 1999).

Moreover, it has been shown that people's blood pressure decreases after only a few minutes of walking in a natural environment (Hartig, 1993). Parsons et al. (1998) studied differences in stress level when the trip from the home to work is made by passing through an attractive landscape as opposed to an industrial roadway environment. Even short micropauses with "relaxing" views have positive effects. One hypothesis is that the emergence of creative innovation environments is facilitated by frequently occurring recreative experiences of "non-demanding" natural elements, e.g., water, stones, earth, plants and animals (Searles, 1960).

The brain's capacity to deal with large amounts of information at higher levels of consciousness – in the directed attention system, DAS – is quite limited (Kaplan & Kaplan, 1989). It has been shown that there are two different types of attention. One is called directed attention and is controlled by higher cognitive centres. It manages processing of impressions such as office work, driving a car through city traffic, etc., and requires a great deal of mental energy (Kaplan, 1990).

The other, involuntary attention, is controlled by the limbic system and the brain stem. It is used, for example, to detect noise in a bush, a butterfly flying over a meadow, etc., and requires very little mental energy. Long-term, high workloads and stress drain the capacity of the DAS, which often leads to burnout syndromes, which in their turn may result in personal tragedies as well as long and costly rehabilitation (Kaplan, Kaplan & Ryan, 1998).

Stays in green environments have been shown to reduce stress and improve concentration. Natural environments with considerable light – such as Swedish grazing lands and older parks, particularly those with elements of water – have been shown to trigger immediate positive feelings. This is explained by the fact that such environments have been of great importance in human evolution (Coss, 1991, Ulrich, 1993). In pressed situations, when people are stressed or ill, access to such environments is of utmost importance. If a person under stress is able to find such a place, more rapid restoration of normal blood pressure and pulse rate is facilitated (Ottosson & Grahn, 1998).

The reason for this seems to be that the brain has a great capacity to deal with sensory impressions through the subconscious, the limbic system and the brainstem. Visual, auditory, tactile and olfactory information are largely processed through the subconscious, probably partially due to hereditary, genetic memory functions from millions of years of human evolution (Coss, 1991). It seems to be the case that stays in green environments facilitate processing of information in higher levels of consciousness, the DAS. Thus, such stays help prevent long-term, high loads and stress that may lead to burnout syndromes. The failure of city planning to properly integrate green environments into our working environments will probably lead to lower productivity, poorer public health and their associated socioeconomic costs.

At the Department of Landscape Planning, Swedish University of Agricultural Sciences, Alnarp Campus, a group of researchers have developed eight experienced qualities or characteristics of open green urban areas that are of great importance for people's preferences and well-being (Grahn & Berggren-Bärring, 1995, Stigsdotter & Grahn, 2003, Grahn et al., 2005). These eight characteristics may be summarized as follows:

1. Serene	Peace, silence and care. Sounds of wind, water, birds and insects. No rubbish, no weeds, no disturbing people.
2. Wild	Fascination with wild nature. Plants seem self-sown. Lichen and moss-grown rocks, old paths.
3. Lush	Rich in species. High biodiversity. A room offering a variety of wild species of animals and plants.
4. Spacious	A room offering a restful feeling of "entering another world", a coherent whole, like a beech forest.
5. The common	A green open place admitting of vistas and stay.
6. The pleasure Garden	A place of imagination. An enclosed, safe and secluded place where you can relax and be yourself, let your children play freely and also experiment.
7. Festive	A meeting place for festivity and pleasure.
8. Culture	The essence of human culture: A historical place offering fascination with the course of time.

Three of the above characteristics have proven to be of particular importance for restoring people's mental capacity: Serene, Space and Wild (Grahn et al., 2005, Stigsdotter, 2005). A feeling of serenity may be assumed to be correlated with the absence of noise. It may be assumed that a feeling of space – of entering another world – is disturbed by traffic noise. In the same way, it may be assumed that all man-made noise and all kinds of man-made sounds disrupt the feeling of being in the wild. Traffic planners have stated that even people in the countryside are exposed to high sound levels. Such high sound levels may come from waves breaking on the shoreline, but they do not disrupt the experience of being in wide-open spaces – quite the contrary in fact. The feeling of security has also been shown to have a high correlation with noise (Berggren-Bärring & Grahn, 1995), and there are great gender differences when measuring feelings of security in urban outdoor areas (Grahn & Larsson, 1997).

One risk factor for public health is the lack of facilities for restorative experiences after a stressful day. This risk factor is expected to largely explain why so many people in Sweden are put on protracted sick leave – a situation that today entails enormous expenses for Swedish society – for illnesses ranging from acute head- and backache, burnout syndromes, depression, high blood pressure, non-insulin-dependent diabetes mellitus, heart disease and obesity (Atkinson et al., 1996). Walks in urban parks and open green areas may act as preventive measures for illnesses caused by a sedentary lifestyle as well as illnesses caused by high stress levels in people's everyday lives. Moreover, rich and poor, men and women, boys and girls from all social classes take walks in urban parks and open green areas because it is an activity that is inexpensive and highly appreciated. Consequently, open green urban areas may be regarded as a democratic resource in health promotion (Grahn & Stigsdotter, 2003).

Our knowledge regarding the optimum size, shape and function of urban green areas with respect to human welfare and biodiversity is, however, still limited. Furthermore, few studies

have been conducted that combine preferences with barriers to moving from home to urban parks or other attractions. Quantitative questionnaire surveys usually show that long distances and busy roads and railways act as important barriers, keeping people from visiting attractive places in towns (ibid). In addition, qualitative in-depth interviews and focus group interviews show that protection, from traffic or from being molested, and experienced qualities are of great importance in deciding whether or not to visit an urban green open space (Grahn 1991, 1994, Berggren-Bärring & Grahn, 1995, Grahn & Larsson, 1997).

Implementation in planning

The research conducted on these eight characteristics in the fields of environmental perception and environmental psychology is now being implemented in planning projects for different purposes and on different scales in the framework of the Interreg project "Landscape as a resource for health and development in the Öresund Sound region" in a collaboration between Sweden and Denmark (www.sundskap.se/publikationer). The eight characteristics have been treated as indicators for health considerations from the perspective of stress reduction and recreation and in order to promote creativity and developent. Using four case studies in southern Sweden, I have in my presentation discussed how the eight characteristics may be assessed in physical planning on different scales.

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