

The Universal Pattern of Design for Therapeutic Parks. Methods of use.

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Abstract— This paper presents the Universal Pattern of Design for Therapeutic Parks - a ready-to-use evaluation tool. This evaluation tool can be used to assess the design of public parks and open public green areas. First, the results of field study with simplified evaluation of 12 public parks in various towns is presented. Then, the example of detailed assessment of one of parks from the first study - a public park in Paris is presented. Finally, a literature study of recommended distances to parks is discussed.

Index Terms—Therapeutic Landscapes, Healing Garden, Universal Pattern of Design, Public Parks, Evidence-based design, Architecture and health, Health promotion

1 INTRODUCTION

Environment could be therapeutic and health- affirming. Over the last 60 years researchers have described numerous therapeutic attributes - qualities of landscape or park infrastructure, which were conducive to well-being of people (Alexander, 1977; Antonovsky, 1996, Harting et al, 2008; Faber Tylor & Kuo 2009; CABE, 2010; Gerlach-Spriggs et al., 1998; Robin Moore and Claire Cooper-Marcus, 2008; Kaplan 1995, Kahn, 1999; Stigsdotter and Grahn, 2002, 2003, 2004; Sternberg 2010; Salingros and Masden, 2008; Ulrich, 2008; Lis A. 2005, Colesca and Alpopi, 2011, Largo-Wight, 2011; Kytä Marketta, 2011; Bengtsson and Grahn, 2014, Frumkin, 2017). The research question was what are those attributes - (qualities, features and characteristics) of therapeutic landscapes and what attributes a public park should contain in order to promote health and well-being of people. It was assumed that the therapeutic potential of a public park could be enhanced, if more of therapeutic attributes of space were integrated. Various methods were used to determine therapeutic landscape attributes: theory triangulation - literature review and integration of theories with field research. The literature review was conducted to search for attributes specified by researchers as conducive to healing and well-being. Then attributes found during literature review were synthesized and verified during field research. As a result of the field studies and theory triangulation the draft of the Universal Pattern was prepared. The Universal Pattern translates research findings into a ready-to-use evaluation tool. It supports movement from evidence - based theories to practice and could guide interventions in open public green areas across a wide range of urban settings. It is presented in Table. 1. THE UNIVERSAL PATTERN OF DESIGN FOR THERAPEUTIC PARKS.

TABLE 1
UNIVERSAL PATTERN OF DESIGN FOR THERAPEUTIC PARKS

1. UNIVERSAL DESIGN

1.1 Place

Area
Location
Surrounding urban pattern

1.2 Environmental characteristics

Soil quality

Water quality
Air quality
Biodiversity
Forms of nature protection
1.3 Universal accessibility
1.4 Access to park
Distance to potential users
Public transport stops
Walkways to park

2. PARK'S FUNCTIONAL PROGRAM

2.1. Psychological and physical regeneration

Natural Landscapes
Green open space
Place to rest in the sun and in the shade
Place to rest in silence and solitude
Possibility to observe other people
Possibility to observe animals

2.2. Social Contacts Enhancement

Organization of events inside the park
Gathering place for groups

2.3. Physical Activity Promotion

Sports and recreational infrastructure
Community gardens

2.4. Catering for basic needs

Safety and security
Places to sit and rest
Shelter
Restrooms
Drinking water
Food

3. ORGANISATION OF SPACE AND FUNCTIONS

3.1. The park spatial composition follows the surrounding urban pattern

3.2. Architectural variety of urban environment

Focal points and landmarks
Structure of interiors and connections
Long vistas (Extent)
Pathways with views
Invisible fragments of the scene (Vista engaging the imagination)
Mystery, Fascination

Framed views
Human scale
3.3. Optimal level of complexity
3.4. Natural surfaces
3.5. Engaging features
Risk/Peril
Movement
3.6. Presence of Water
3.7. Sensory stimuli design
Sensory stimuli: Sight
Sensory stimuli: Hearing
Sensory stimuli: Smell
Sensory stimuli: Touch
Sensory stimuli: Taste
Sensory path

4. PLACEMAKING

4.1. Works of Art
4.2. Monuments in the park
4.3. Historic places
Culture and connection
to the past
4.4. Thematic gardens
4.5. Personalization
4.6. Animation of place

5. PURSUIT OF -SUSTAINABLE DEVELOPMENT

5.1. Green Infrastructure
5.2. Parks of Second (New) Generation
5.3. Biodiversity protection
Part of park not-available to visitors
Native plants
Native animals
Natural maintenance methods
5.4. Sustainable water management
Rainwater infiltration
Irrigation with non-potable water
Park in a flood risk zone
5.5. Urban metabolism
5.6. Ecological energy sources

2 MATERIALS AND METHODS

2.1 Aims of this study

The main purpose of the present paper is to present practical examples how a ready-to use practical evaluation tool for designers - The Universal Pattern of Design for Therapeutic Parks can be used. This paper presents two case studies which illustrate two methods how The Universal Pattern of Design for Therapeutic Parks can be used to assess the public parks: the rough assessment and detailed assessment.

The strength of this study is a combination of literature review in search of therapeutic attributes of open public green areas, theory synthetization and field research. In this paper two case studies are presented – the first one is a rough assessment of therapeutic qualities conducted in 12 public parks in various cities. This method of assessment can be used to compare the therapeutic potential of various parks. The second one is a detailed assessment of one public park – Parc Floral in Paris. This method of assessment can be used to evaluate the design

and equipment deficiencies of a specific park e.g. in order to improve its therapeutic qualities.

2.2 Method 1

Over a hundred of public parks were visited and roughly evaluated in order to choose twelve where almost all of the therapeutic attributes – (qualities, features and characteristics) could be found. The finding that there are parks which have all the therapeutic attributes described by researchers was considered a proof that evaluation using the Universal Pattern is feasible and can be conducted for any public park.

The twelve parks selected for this phase of study, which reunite the therapeutic qualities from the Universal Pattern included public parks in Poznań, Cracow and Tri-city (Gdańsk, Sopot and Gdynia), Paris and Stockholm, as well as smaller cities – for example Wejherowo or Rabka. The Universal Pattern was used to assess modern Parks of Second (New) Generation - for example Grand Parc de Docks de Saint Ouen and Parc du Chemin-de-l'Île in Nanterre.

List of selected parks:

1. Paris, Martin Luther King Park
2. Paris, Parc Floral
3. Nanterre -Parc Du Chemin De L'île
4. Saint Ouen, Grand Parc Du Docks De Saint Ouen
5. Stockholm – Djurgarden
6. Gdynia, Park Kiloński
7. Cracow, Park Jordana
8. Wejherowo, Park im. A. Majkowskiego
9. Poznan, Park Tysiąclecia
10. Rabka, Park Zdrojowy

All of those parks were evaluated using the Universal Pattern for Therapeutic Parks.

Majority of the attributes were evaluated using 0-1 scale:

Not observed

Observed and evaluated as satisfactory

Those attributes which are non-comparable where described with words.

2.3 Discussion of first method. Rough assessment of public parks.

During the field study, it was found that some large urban parks with numerous equipment and sport facilities contain all the therapeutic attributes described by researchers, for example: Park Jordana in Cracow, Malta Park in Poznan, Djurgarden Island in Stockholm, Floral Park in Paris, Martin Luther King Park in Paris.

However, the limitation of field observation phase comes from the subjectivity of individual perception. While majority of therapeutic attributes can be assessed objectively, some are subjective. The precise methods of comparison cannot be used, as it is impossible to evaluate and compare some therapeutic attributes: i.e. Sensory stimuli, Mystery, Fascination, Risk/Peril, etc. Moreover, the therapeutic experience of green area can vary among individuals. Therefore, the Universal Pattern was not used as a tool for statistical comparison of

therapeutic values of different parks, but rather as evaluation tool.

The assessment using 0- not observed or 1-subjectively observed does not leave a space for evaluation of quality and density of a given characteristics. However it can be useful a rough evaluation and comparison of public parks e.g. assessment of all public parks in a city.

2.4 Method 2. Detailed Assessment of a public park in Paris

The Universal Pattern for Therapeutic Parks can be used to perform a detailed assessment of which specific areas of a given park need to be improved. This paper presents detailed assessment of Parc Floral in Paris - one of parks from the first study. This park was chosen because the first phase - rough assessment - demonstrated it reunited all of the attributes. Then a detailed evaluation was conducted using The Universal Pattern of Design for Therapeutic Parks as a tool for detailed assessment. Multiple visits to the park were necessary to verify the presence of the attributes. Evaluation was performed for each of the attributes separately.

2.5 Method 2. Discussion

During this field study the major limitation - the subjectiveness of assessment was mitigated as more detailed description of a given characteristic was introduced. However, the evaluation was still subjective when it came to describing the density or quality of very individual experiences, i.g. mystery/ fascination, risk/peril, etc. This detailed method can be used to identify weak points in therapeutic landscapes of public parks and address them more adequately.

3. RESULTS OF ADDITIONAL LITERATURE REVIEW RELATED TO ACCESSIBILITY TO USERS

During the field study another factor was determined to be relevant - accessibility to users. Sarkar, Webster and Gallacher (2014) wrote that the accessibility of green space can lead to improvement in people's health. Simply, easy access to green space stimulates frequency of walking and other forms of physical activity and contributes to general improvement of health of inhabitants. It is a common knowledge that even moderate levels of activity, for example walking, decrease the effects of sedentary lifestyle and mitigate contemporary health concerns.

The frequency of park visits was found to depend upon the distance to a local park. Residents use more often parks located within walking distance from their homes. Danish study

300 meters to open green space are more likely to be physically active and less likely to be stressed, than those living further away from parks. A similar research in Gdańsk, Poland confirmed that majority of park visitors live within walking distance to park (PKE, 2010). The distance to the park is a practical indicator of its accessibility

4. CONCLUSION

While previous research has largely focused on the importance of contact with nature and access to parks, this study tests a ready-to-use evaluation tool for the designers. It can be assumed that integrating more therapeutic attributes can improve the therapeutic qualities of a given park. The Universal Pattern should be further developed, if new attributes are recognized by the researchers.

The Universal Pattern of Design for Therapeutic Parks is as a ready-to-use evaluation tool for evaluating the therapeutic potential of existing public parks. It can be used to assess the therapeutic qualities of parks and identify attributes which are missing. This evaluation tool allows designers to fully include the research evidence in their projects of therapeutic parks.

The two methods to use the Universal Pattern for either rough evaluation or detailed assessment can be used depending upon circumstances and specific needs. The importance and recommendations for short distances to park is recommended for further research.

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