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THERAPEUTIC FUNCTIONS OF FORESTS AND GREEN AREAS WITH REGARD TO THE UNIVERSAL POTENTIAL OF SENSORY GARDENS

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THERAPEUTIC FUNCTIONS OF FORESTS:

- ✓ well-being,
 - ✓ disinfection,
 - ✓ blood pressure lowering,
 - ✓ sedative properties,
 - ✓ stimulant properties,
 - ✓ anti-asthma,
 - ✓ anti-tuberculosis,
 - ✓ immune-boosting,
-
- ✓ a positive impact on interpersonal self-improvement, etc.

ongoing rapid urbanisation
urban and suburban forests
diversifying the infrastructure

urban environment
compact city

population ageing
social integration

Keep calm and be fit!



Recreational development for everyone



Fot.1



Fot.2



Fot.1 https://www.123rf.com/photo_142477430_two-disabled-men-resting-in-a-campsite-with-friends-wheelchair-in-the-forest.html

Fot.2. <https://www.lakewildernessarboretum.org/natural-areas/childrens-discovery-forest/>

“Sensory garden is a self-contained area that concentrates a wide range of sensory experiences. Such an area, if designed well, provides a valuable resource for a wide range of uses, from education to recreation.” (Sensory Trust, 2007)

“Taking into account the sensory element (colours, textures) as the key factor in designing these gardens, its role is to encourage the users to touch, smell and actively experience the garden with all their senses.” (Hussein, Abidin, Omar, 2013)



Fot.3

Safety features

- Assistance from other people
- Accessories, equipment (e.g. emergency buttons, stability, solidity of equipment)
- Architecture, space planning (clear path layout, diversified path surfaces, kerbs, railings)

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Typhlographics with audiodescription, tactile plan



Tactile path and tactile wall



Fot.7



Fot.8



Fot.9



Fot.10

Varied surface



Fot.11



Fot.12



Fot.13



Fot.14

„Sound nests”
&
„Scent chair”

Rest areas, clear course
of paved, anti-skid
roads

Tactile model of a mountain



Braille tablets for the blind



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Photos:

Fot.1. https://www.123rf.com/photo_142477430_two-disabled-men-resting-in-a-campsite-with-friends-wheelchair-in-the-forest.html

Fot.2. <https://www.lakewildernessarboretum.org/natural-areas/childrens-discovery-forest/>

Fot. 3. S. Wajchman-Świtalska

Fot. 4-18. A. Zajadacz & A. Lubarska

References:

1. Vlachokostas, C., Baniyas, G., Athanasiadis, A., Achillas, C., Akylas, V., Moussiopoulos, N. Cense: a tool to assess combined exposure to environmental health stressors in urban areas. *Environ. Int.* **2014**, *63*, 1-10.
2. Roe, J.J.; Thompson, C.W.; Aspinall, P.A.; Brewer, M.J.; Duff, E.I.; Miller, D.; Mitchell, R.; Clow, A. Green Space and Stress: Evidence from Cortisol Measures in Deprived Urban Communities. *Int. J. Environ. Res. Public Health* **2013**, *10*, 4086-4103.
3. Miyazaki, Y., Park, B.J., Lee, J., 2011. Nature therapy, in designing our future. In *Local Perspectives on Bioproduction, Ecosystems and Humanity*, Osaki, M., Braimoh, A., Nakagami, K., Eds.; United Nations University Press: Tokyo, Japan, 2011; vol. 2011, pp. 407-412.
4. Song, C., Ikei, H., Kobayashi, M., Miura, T., Li, Q., Kagawa, T., Kumeda, S., Imai, M., Miyazaki, Y. Effects of viewing forest landscape on middle-aged hypertensive men. *Urban For. Urban Green* **2017**, *21*, 247-252.
5. Bell, S.L., Foley, R., Houghton, F., Maddrell, A., Williams, A.M. From therapeutic landscapes to healthy spaces, places and practices: A scoping review, *Social Science and Medicine* **2018**, *196*, 123-130.
6. Thompson Coon, J., Boddy, K., Stein, K., Whear, R., Barton, J., Depledge, M.H. Does Participating in Physical Activity in Outdoor Natural Environments Have a Greater Effect on Physical and Mental Wellbeing than Physical Activity Indoors? A Systematic Review, *Environmental Science & Technology* **2011**, *45*(5), 1761-1772.
7. Krzymowska-Kostrowicka, A. *Geoekologia turystyki i wypoczynku*. Wydaw. Naukowe PWN: Warsaw, Poland, 1997, pp. 1-239.
8. Loureiro G, Rabaca MA, Blanco B, et al. Urban versus rural environment--any differences in aeroallergens sensitization in an allergic population of Cova da Beira, Portugal? *Eur Ann Allergy Clin Immunol*, 2005; *37*(5), 187-93.
9. Eriksson, L., Nordlund, A. How is setting preference related to intention to engage in forest recreation activities? *Urban Forestry and Urban Greening* 2013,*12*(4),481-489.
10. Dwyer, J., Schroeder H., Gobster, P. The significance of urban trees and forests: toward a deeper understanding of values. *Journal of Arboriculture* 1991, *17*, 276-284.
11. Germann-Chiari, C., Seeland, K. Are urban green spaces optimally distributed to act as places for social integration?. Results of a geographical information system (GIS) approach for urban forestry research. *Forest Policy and Economics* 2004, *6*, 3-13
12. Tsunetsugu, Y., Lee, J., Park, B., Tyrväinen, L., Kagawa, T., Miyazaki, Y. Physiological and psychological effects of viewing urban forest landscapes assessed by multiple measurements. *Landscape and Urban Planning* 2013, *113*, 90-93.
13. Sensory Trust. Sensory garden design advice <http://www.sensorytrust.org.uk/information/factsheets/sensory-garden-4.html> (accessed May 25, 2018).
14. Hennig, S.; Sattler, T.; Wasserburger, M.; Wasserburger, W. W. How to Improve Accessibility of Natural Areas: About the Relevance of Providing Information on Accessible Services and Facilities in Natural Areas Sabine Hennig, Thomas Sattler, Maria Wasserburger, Wolfgang W. Wasserburger. **2015**, *2* (May), 803–812.
15. Вукочич (Vukovic), H. A. (Natalya). *Сенсорные Сады: Теория До Практика (Sensory Gardens: Theory and Practice)*; издательские решение: Санкт-Петербург, 2019.
16. Hussein, H. Sensory Gardens: Assessing Their Design and Use Publishing for a Sustainable Future. *Intell. Build. Int. Earthscan* **2010**, *20035*, 116–123. <https://doi.org/10.3763/inbi.2010.0035>.
17. Janeczko, E.; Jakubisová, M.; Woźnicka, M.; Fialova, J.; Kotásková, P. Preferences of People with Disabilities on Wheelchairs in Relation to Forest Trails for Recreational in Selected European Countries. *Folia For. Pol. Ser. A* **2016**, *58* (3), 116–122. <https://doi.org/10.1515/ffp-2016-0013>.
18. Ogonowska-Chrobrowska, H.; Jakubowski, M. „las Widziany Dotykiem” – Integracyjny Leśny Ogród Edukacyjny w Nadleśnictwie Sieraków. *Stud. i Mater. CEPL w Rogowie* **2010**, *1* (24), 165–172.
19. Hussein, H., Abidin, N., Omar, Z. Engaging Research and Practice in Creating for Outdoor Multi-sensory Environments: Facing Future Challenges. *Procedia - Social and Behavioral Sciences* **2013**, DOI:10.1016/j.sbspro.2013.11.057
20. Sensory Trust. Sensory garden design advice <http://www.sensorytrust.org.uk/information/factsheets/sensory-garden-4.html> (accessed May 25, 2018).



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Thanks for your attention!
