

	<p>climate change adaptation and resilient urban planning. EMS Annual Meeting Abstracts Vol. 16, EMS2019-341, 2019.</p> <p>Nature4Cities, D2.1 - System of integrated multi-scale and multi-thematic performance indicators for the assessment of urban challenges and NBS.</p> <p>https://www.nature4cities.eu/post/nature4cities-defined-performance-indicators-to-assess-urban-challenges-and-nature-based-solutions.</p> <p>Nature4Cities, D2.2 - Expert-modelling toolbox</p> <p>Nature4Cities, D2.3 – NBS database completed with urban performance data</p> <p>https://www.nature4cities.eu/post/applicability-urban-challenges-and-indicators-real-case-studies</p> <p>Nature4Cities, D2.4 - Development of a simplified urban performance assessment (SUA) tool</p>
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2.10.4 Thermal Load Score

Project Name: Nature4Cities (Grant agreement: No. 730468)

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Thermal Load Score	Climate Resilience
Description and justification	<p>The TLS (Thermal Load Score) is one out of five Key Performance Scores of the GREENPASS® system.</p> <p>It enables a statement regarding the contribution of the area to the urban heat island and the thermal load emitted to adjacent and surrounding areas. It's typically assessed for a project area on a heat day (30°C). The cooling capability of NBS has positive influence on the thermal load score and is important for climate adaptation. It's a crucial indicator that describes the impact of retrofit and new urban developments on the urban climate.</p>
Definition	<p>The TLS (Thermal Load Score) describes the mean difference (Delta K/C°) between the hourly average In- and Out-flow Air temperature of an area, from the ground to the roof level (of highest building in area) over the day (typical heat day).</p>
Strengths and weaknesses	<ul style="list-style-type: none"> + worldwide standardized key performance score regarding thermal load, air temperature and cooling capability of NBS + easy for communication, understanding and decision-making

	<ul style="list-style-type: none"> + useful for design optimization + as a base for regulative definitions (legal prohibition of climate deterioration) - needs simulation or intensive on-site monitoring
Measurement procedure and tool	<ul style="list-style-type: none"> - modelling, simulation tools and GREENPASS® analysis and calculation - numerical value in °C
Scale of measurement	Object and neighbourhood scale
Data source	
Required data	<ul style="list-style-type: none"> - project area incl. geoposition - NBS typology - hourly air temperature (Ta) of instreaming air body over a day - hourly air temperature (Ta) of outstreaming air body over a day
Data input type	<ul style="list-style-type: none"> - air temperature (Ta) - 3d model with surface and vegetation types incl. characteristics (e.g., albedo, emissivity,..)
Data collection frequency	- one to several times in planning and optimization process
Level of expertise required	easy to calculate and understand – for planners and decision makers
Synergies with other indicators	Link to ‘Mean daytime local temperature’, ‘Air cooling’
Connection with SDGs	SDG 13 Climate action
Opportunities for participatory data collection	-
Additional information	
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Nature4Cities, D2.2 - Expert-modelling toolbox

Nature4Cities, D2.3 – NBS database completed with urban performance data

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Nature4Cities, D2.4 - Development of a simplified urban performance assessment (SUA) tool