DAYLIGHT ACADEMY

Annual Conference & General Assembly 2025

22-23 May 2025
TUM-IAS, Garching (near Munich)
Germany

Parallel sessions

General information

The conference programme features parallel sessions on both days. You can select one session per day. Please note that the number of participants per session is limited and places will be allocated on a first come, first served basis.

We thank you for your understanding and look forward to lively discussions!

Overview

Thursday, 22 May 2025
from 15:30 to 17:00

A. A room with a view: communicating the results from the project to the public
B. DLA Societal Topics: daylight versus urban density & daylight and global health
C. Latitude, health and sustainable goals
D. Light and molecules in health and crop protection
E. New UVa and NIR health hypotheses: implications for design

Friday, 23 May 2025
from 10:30 to 12:30

F. Citizen science to raise awareness of daylight's impact on health and wellbeing
G. Daylight and One Health: the avenue to reality
H. Daylight in a circular and sustainable built environment
I. DLA Societal Topics: right to daylight & future solar societies
J. The future of The Daylight Award

Parallel session A

A room with a view: communicating the results from the project to the public

Thursday, 22 May 2025
from 15:30 to 17:00

Lead
Prof. Barbara Szybinska Matusiak, NTNU, Trondheim, Norway
Prof. Klaus Martiny, Mental Health Centre Copenhagen, Denmark
Dr Natalia Sokol, Gdansk University of Technology, Poland
Filomena Russo, University of Cambridge, UK

Description

The DLA project "A room with a view" was initiated out of a deep conviction about the importance of a window view for the health and well-being of building users. As a result of this project, two journal articles and a booklet have been published.

In this session, the results from the two research papers by the project team will be presented, followed by an interactive workshop where interdisciplinary groups of participants will work together, applying mixed method assessments of window views.

SPACE: room with windows and views out.

TOOLS: luxmeters, mobile phones with camera, printed room plans, A4 paper and pencils/ballpoint pens, interactive anonymized live online questions via Mentimeter / Slido, and free mobile phone Apps.

All tools will be provided but participants are asked to download the following free luminance capture app – Fusion Optix[1] – on their mobile phones (at least one person per group). Participants need to have access to the internet during the workshop.

Objectives

This workshop aims to delve into methods of assessing window views to the outside and the visual environment within the room itself. The quality attributes proposed and tested in our research will be applied during the workshop, along with photography, freehand drawing and light measurements.

The workshop also explores the differences between lighting professionals using words together with technical concepts and specialists from different backgrounds who use everyday language to describe the visual environment. Is it possible to bridge the gap between groups with help from varied methods and newly developed apps?

[1]Fusion Optix app (download the FREE version)
IOS: https://apps.apple.com/us/app/brightminds-luminance-camera/id1449237565
Note: there is also an Android version of this App

Parallel session B

DLA Societal Topics: daylight versus urban density & daylight and global health

Thursday, 22 May 2025
from 15:30 to 17:00

Lead
Prof. Marilyne Andersen, EPFL, Lausanne, Switzerland
Prof. Manuel Spitschan, Technical University of Munich, Germany and Max Planck Institute for Biological Cybernetics, Tübingen, Germany

Description

The DLA is entering a new strategic phase – one where action takes centre stage. After a decade of building a strong foundation (startup and consolidation phases), the upcoming action phase (starting in 2026, pending funding by Velux Stiftung) will focus on creating knowledge for change and transforming knowledge into change.

To guide this transition, the DLA is shaping societal priority topics for the next five years – topics that leverage the DLA's strengths in interdisciplinarity, outreach, and unique collaborative potential. This participatory process began at the Annual Conference 2024 in Trondheim, and since then, a dedicated working group of eight DLA members has refined four key topics, supported by the DLA steering committee.

This session is more than just a discussion – it's a call to action. You will be working on the following themes: Daylight versus Urban Density & Daylight and Global Health.

A one-pager per topic giving more details about the background, potential agenda and synergies between the topics is available here.

Objectives

Join this interactive workshop to

- Shape the future: Refine the proposed topics with your insights and expertise and bring new ideas within the framework.
- Co-create initiatives: Work in interdisciplinary teams to turn ideas into concrete initiatives.
- Build momentum: Develop motivating kick-off plans to pursue beyond the conference towards DLA proposals or other impactful initiatives.

Parallel session C

Latitude, health and sustainable goals

Thursday, 22 May 2025
from 15:30 to 17:00

Lead
Dr Richard Hobday, independent researcher and author, UK
Prof. Brian Norton, Tyndall National Institute, University College Cork and Technological University Dublin, Ireland

With
Dr Cláudia Naves David Amorim, Faculty of Architecture and Urbanism, University of Brasília

Description

The 2030 Agenda for Sustainable Development aims to reduce premature deaths from non-communicable diseases by one-third by 2030. The initiative began in 2013 in response to a growing burden of chronic disease worldwide. This DLA project is investigating how latitude affects heart disease, depression, cancer and other health problems and what part the built environment plays in this. The workshop will start with a brief introduction to the subject. This will be followed by presentations of two draft documents by participants in this project. The first will be on the influence of latitude and daylight on building design and urban planning, and health. In parallel with this research, a second group is examining the impact of latitude and daylight on both chronic and infectious diseases and how these interact. They will also present some of their findings.

Objectives

The aim is to develop a better understanding of global health problems. The project will investigate how daylight, or lack of it, at different latitudes influences health. It will also examine how the built environment contributes to this.

Parallel session D

Light and molecules in health and crop protection

Thursday, 22 May 2025
from 15:30 to 17:00

Lead
Prof. Burkhard König, University of Regensburg, Germany

Description

The interaction of light with suitable molecules can create antibacterial or antifungal effects. In this session, we will show and discuss the potential through three presentation:

Antibacterial treatments in Medicine with Light
by Prof. Tim Maisch, University Hospital Regensburg

The bactericidal effect of sterilization using visible light alone or in combination with a photodynamically active dye is among the latest techniques currently being investigated worldwide. Clinical applications of these technologies include infections in the skin, dental areas, wounds, stomach, nasal passages, toenails, and other sites where effective light delivery is possible.

Tattoo dyes, health effects with daylight and tattoo removal
by Prof. Wolfgang Bäumler, University Hospital Regensburg

In Germany, around 20 percent of the population are tattooed using various inorganic or organic pigments. Tattooed skin is often exposed to sunlight or removed with laser light. This can chemically alter certain tattoo pigments, which can also result in harmful products.

Light-activated fungicides to combat pest resistance in crop protection
by M.Sc. Alberto Nunez, University of Regensburg

The crop protection industry has relied on chemical pesticides for a century, but this model is unsustainable due to rising pest resistance. We propose a new approach: conjugate fungicides that incorporate a photodynamic sensitiser, effectively killing resistant fungi under light while overcoming immunity to original compounds.

Objectives

Three short presentations of 20 minutes will introduce the topics and kindle the discussion.

Parallel session E

New UVa and NIR health hypotheses: implications for design

Thursday, 22 May 2025
from 15:30 to 17:00

Lead
Ms Lisa Heschong, author and architectural researcher, USA

Description

Hypotheses regarding the physiological impacts of non-visible solar radiation, especially UVa and NIR, are rapidly evolving. Proposed negative health impacts from reduced UVa and NIR exposure in modern societies range from childhood eye development (myopia) and neural development, along with adult energy metabolism, mental health and wound healing. If substantiated, these biological mechanisms may have profound implications for future daylight design priorities. However, increased exposure to broad spectrum sunlight is hindered by our current indoor lifestyles. This will likely be further exacerbated by next-generation low-e window coatings, now requried by many energy codes, which favor visable light transmission while severely restricting both UVa and NIR transmission indoors. Furthermore, both UVa and NIR wavelengths are entirely left out of most all daylight research and analysis, making evalution of their public health impacts very difficult.

Objectives

This session will first briefly introduce some of the novel biological mechanisms and health outcomes currently proposed, and the maturity of available evidence. A panel discussion moderated by Lisa Heschong will consider the design and policy implications of these hypotheses if substantiated, and take questions and comments from the audience.

Discussants:

- Dr Katharina Wulff, Radiation Sciences and Molecular Biology, Umeå University, Sweden
- Prof. Richard Weller, Medical Dermatology, The University of Edinburgh, UK
- Prof. Peter Edwards, Plant ecology, ETH Zurich, Switzerland

Our objective will be to try to prioritize how these hypotheses might logically impact architectural design and urban policy:

- Which populations would be most at risk from poor UVa or NIR exposure patterns?
- What locations, building types, or space types have the greatest challenges or opportunities for remediation?
- Which technologies offer opportunities or constraints?
- How might these priorities interact with other future trends, such as climate change or urban densification?

And finally, we will assess the need for further information:

- What additional health information would be most needed to inform these decisions?
- What additional daylight data and tools would be required to support further research and decision making?

Parallel session F

Citizen science to raise awareness of daylight's impact on health and wellbeing

Friday, 23 May 2025
from 10:30 to 12:30

Lead
Dr Marijke Gordjin, University of Groningen & Chrono@Work, The Netherlands
Dr. Oliver Stefani, Lucerne University of Applied Sciences and Arts, Switzerland

Description

Citizen science is any activity that involves the public in scientific research and thus has the potential to bring together science, policy makers, and society as a whole in an impactful way. The idea is that all people can participate in for instance data collection, data interpretation and analysis, and to publication and dissemination of results. At the same time, scientists disseminate knowledge on the topic to involve the public and to be able to obtain reliable data. (Citizen Science Europe https://eu-citizen.science/)

In the current project about (day)light, the idea is to inform the public about what (day)light is, how it is important for health, and what we mean with the right light at the right time. By collecting personal light exposure, light behaviour, and knowledge on time of day, season, and location, we will create a global map with an estimate of people's light exposure across the day, the year and place on earth. It will be scientifically informative to see how many people are exposed to the right light at the right time.

Objectives

We will create small groups and have a brainstorm session to answer the objectives. At the end we will combine all ideas and try to define priorities and a to do list to come to a project proposal.

1. Finding an effective communication method based on Citizen Science.
2. What data do we want to be collected by Citizens?
3. What information do we want to share?
4. What do we need to set up a Citizen Science project (e.g. app developer, protected server, time, money, brain power, data scientist, translations).
5. How can we promote the project on a global scale?

Parallel session G

Daylight and One Health: the avenue to reality

Friday, 23 May 2025
from 10:30 to 12:30

Lead
Prof. Michael J. Balick, The New York Botanical Garden, USA
PD Dr Kristjan Plaetzer, Paris Lodron University Salzburg, Austria
Prof. Heinrich Walt, University Hospital Zurich, Switzerland

Description

Part 1 (10:30 – 11:30)

Climate change has reshaped ecosystems, fostering the spread of pathogens such as *Candida auris*, once a harmless saprophyte to become a major hospital-acquired infection source.

Lightning up the path to Photodynamic Inactivation of multi-resistant Candida auris
by PD Dr Kristjan Plaetzer, Paris Lodron University Salzburg, Austria

Candida auris, originally a saprophyte, has adapted to hospital environments. Its resistance to multiple antifungal drugs makes it very difficult to treat and a severe concern in healthcare units. The fungus can cause life-threatening bloodstream infections, wound infections, or organ infections. It persists on hospital surfaces, spreading easily via contact with contaminated surfaces or medical devices. This leads to outbreaks, particularly in intensive care units. Research shows that light, combined with the natural photosensitizer sodium magnesium chlorophyllin, can inactivate Candida auris through Photodynamic Inactivation, offering a biocompatible and effective approach to control the pathogenic fungus.

Dosimetry of daylight and its application in PDI
by Prof. Ronald Sroka, Laser-Forschungslabor, LIFE Center, Department of Urology, LMU Hospital, Germany

Precise dosimetry of daylight is essential to maximize its therapeutic and environmental benefits. Understanding about intensity, duration, and spectral composition of sunlight can enhance its applications in health, agriculture, and disinfection. As a natural resource, sunlight can be harnessed for Photodynamic Inactivation (PDI) of pathogens, promoting sustainable infection control. Additionally, controlled sunlight exposure supports vitamin D synthesis, plant growth, and overall well-being.

PDI with zirconium dental implants as optical waveguides and the potential use in combination with daylight
by B.Sc. Kolja Lehmann, University Hospital of Zurich, Switzerland

The successful use of PDI combined with ceramic materials as optical waveguides can destruct bacterial biofilms. Together with well dosed daylight it has the potential to reduce the need for antibiotic prescription in oral medicine.

Part 2 (11:30 – 12:30)

Daylight plays an important role in the health and lifestyle of peoples worldwide. This section of the session will discuss Pacific Island perspectives of sunlight, environment and health as well as Western therapeutic perspectives.

Pacific Island Perspectives on Daylight and Human and Environmental Health

by Prof. Michael J. Balick, The New York Botanical Garden, Bronx, NY USA.

This brief commentary will report on recent findings relating to a project on the study of daylight and culture in the Republic of Vanuatu, where local culture is very much influenced by the sun, shaping lifestyle, health and nutrition.

Daylight: How can we promote health while minimizing the risks of sunlight?

by Dr Ládi Szabolcs, MD Fellow, Arizona University Andrew Weil Center for Integrative Medicine (USA) and the Medical University of Debrecen Integrative Medicine Working Group (Hungary).

Sunlight plays a crucial yet complex role in influencing human health and cancer dynamics, acting both as a preventive agent and a risk factor for cancer. One of the essential benefits of sunlight exposure is its role in the synthesis of vitamin D. When the skin is exposed to ultraviolet B (UVB) rays, it triggers the production of vitamin D, a critical nutrient that has been shown to have protective effects against certain cancers, such as colorectal, breast, and prostate cancers. Moderate and controlled exposure to sunlight is thus beneficial for overall health and may contribute to lowering the risk of certain types of cancers. Conversely, excessive sunlight exposure, particularly to ultraviolet (UV) radiation, poses significant cancer risks. However, examples from Indigenous and other cultures all around the world show us feasible ways of maximizing the benefits of sunlight while minimizing its potentially harmful effects. The use of ingestible and topical photoprotective substances, including phycocyanin, has a well-documented and long history worldwide that we can learn from and utilize.

Objectives

- Part 1: three short presentations of 10 minutes will introduce the topics and kindle the discussion.
- Part 2: first talk of 10 minutes, second talk of 30 minutes and 20 minutes for discussion.

Parallel session H

Daylight in a circular and sustainable built environment

Friday, 23 May 2025
from 10:30 to 12:30

Lead
Arlind Dervishaj, KTH Royal Institute of Technology, Sweden
Prof. Brian Norton, Tyndall National Institute, University College Cork and Technological University Dublin, Ireland

Description

As the built environment moves towards more sustainable and circular practices, the role of daylight in these strategies remains an underexplored area of research. This workshop will explore how daylighting principles can contribute to a Circular and Sustainable Built Environment, such as through the reuse of buildings, façade components, windows, and glazing, while considering relationships and impacts on daylight performance and qualities, design process, energy use, and human comfort and health.

Recent research has started bridging this gap, demonstrating how solar-responsive and adaptable façades can optimize daylight while enhancing the circularity of facades in urban environments undergoing urbanization and densification. However, further investigation is needed to understand the interaction between daylight and circular construction practices, including adaptive reuse, reuse of building components, glazing, and material recovery.

Objectives

- Identify various daylight and circular strategies and their interaction/integration.
- Explore the influence of coupled daylight and circularity strategies on building performance, visual comfort, and health effects.
- Discuss daylight properties and qualities of reused buildings, façade components, and glass versus new high-performance buildings and components.
- Identify the next steps and define possible outcomes.

References

- Dervishaj, A., & Gudmundsson, K. (2025). Parametric design workflow for solar, context-adaptive and reusable facades in changing urban environments. Journal of Building Performance Simulation, 1–30. https://doi.org/10.1080/19401493.2024.2432916
- Dervishaj, A. (2024). Sunlight Autonomy for Sustainable Buildings and Cities: Maximizing daylight potential outdoors and indoors. Presented at the Daylight Academy's Annual Conference & General Assembly 2024, 30-31 May 2024, Trondheim, Norway. Retrieved from https://urn.kb.se/resolve?urn=urn:nbn:se:kth:diva-347214
- Dervishaj, A., & Gudmundsson, K. (2025). Sunlight Autonomy for Buildings: A New Methodology for Evaluating Sunlight Performance in Urban and Architectural Design. LEUKOS, 21(1), 34–64. https://doi.org/10.1080/15502724.2023.2297967
- Dervishaj, A. (2023). From Sustainability to Regeneration: a digital framework with BIM and computational design methods. Archit. Struct. Constr. 3, 315–336. https://doi.org/10.1007/s44150-023-00094-9

Parallel session I

DLA Societal Topics: right to daylight & future solar societies

Friday, 23 May 2025
from 10:30 to 12:30

Lead
Prof. Christoph Küffer, OST Eastern Switzerland University of Applied Sciences, Switzerland
Roman Keller, Artist, Atelier Hemauer/Keller, Switzerland
Prof. em. Bernhard Wehrli, Eawag Dübendorf, Switzerland

Description

The DLA is entering a new strategic phase – one where action takes centre stage. After a decade of building a strong foundation (startup and consolidation phases), the upcoming action phase (starting in 2026, pending funding by Velux Stiftung) will focus on creating knowledge for change and transforming knowledge into change.

To guide this transition, the DLA is shaping societal priority topics for the next five years – topics that leverage the DLA's strengths in interdisciplinarity, outreach, and unique collaborative potential. This participatory process began at the Annual Conference 2024 in Trondheim, and since then, a dedicated working group of eight DLA members has refined four key topics, supported by the DLA steering committee.

This session is more than just a discussion – it's a call to action. You will be working on the following themes: Right to daylight & future solar societies.

A one-pager per topic giving more details about the background, potential agenda and synergies between the topics is available here.

Objectives

Join this interactive workshop to

- Shape the future: Refine the proposed topics with your insights and expertise and bring new ideas within the framework
- Co-create initiatives: Work in interdisciplinary teams to turn ideas into concrete initiatives
- Build momentum: Develop motivating kick-off plans to pursue beyond the conference towards DLA proposals or other impactful initiatives

Parallel session J

The future of The Daylight Award

Friday, 23 May 2025
from 10:30 to 12:30

Lead
Prof. em. Gerd Folkers, ETH Zurich, Switzerland

Description

The Daylight Award, the premier international award for daylight in architecture and daylight research, is newly being organised and presented by the Daylight Academy (DLA). This is a significant opportunity for both the DLA and the award itself to increase knowledge and awareness of the cross-disciplinary importance of daylight among the public and wider science/research community.

There are still many researchers out there who are not aware that their research is eligible for a daylight award, nor, indeed, that there is a community of daylight experts. Our goal is also to find ways to reach them and raise awareness of the daylight community.

This parallel session will explore how The Daylight Award can be developed into the future to bolster its status among scientific and architectural awards. The primary aim is to set-up an interdisciplinary working group that will create a list of recommendations for the next edition of the Award. These recommendations will include ideas on how to leverage the daylight community's potential among its scientific networks as well as refining the award's nominations and laureate selection process. Other, outside-the-box ideas are also welcome.

Objectives

- Create a working group that will drive the development of The Daylight Award into the future.
- Explore ways through which the award can become more known among the daylight community as well as scientists, researchers and architects at large.
- Refine the nominations and selection process of The Daylight Award laureates.