

1. Record Nr.	UNINA9910557489403321
Autore	Brunetta Grazia
Titolo	Bridging the Gap : The Measure of Urban Resilience
Pubbl/distr/stampa	Basel, Switzerland, : MDPI - Multidisciplinary Digital Publishing Institute, 2021
Descrizione fisica	1 online resource (266 p.)
Soggetti	Economics, finance, business & management
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	<p>The concept of resilience has arisen as a "new way of thinking", becoming a response to both the causes and effects of ongoing global challenges. As it strongly stresses cities' transformative potential, resilience's final purpose is to prevent and manage unforeseen events and improve communities' environmental and social quality. Although the resilience theory has been investigated in depth, several methodological challenges remain, mainly related to the concept's practical sphere. As a matter of fact, resilience is commonly criticised for being too ambiguous and empty of meaning. At the same time, turning resilience into practice is not easy to do. This will arguably be one of the most impactful global issues for future research on resilience. The Special Issue "Bridging the Gap: The Measure of Urban Resilience" falls under this heading, and it seeks to synthesise state-of-the-art knowledge of theories and practices on measuring resilience. The Special Issue collected 11 papers that address the following questions: "What are the theoretical perspectives of measuring urban resilience? What are the existing methods for measuring urban resilience? What are the main features that a technique for measuring urban resilience needs to have? What is the role of measuring urban resilience in operationalising cities' ability to adapt, recover and benefit from shocks?"</p>

2. Record Nr.	UNINA9911019942303321
Autore	Khanh Tran Quoc
Titolo	Human Centric Integrative Lighting : Technology, Perception, Non-Visual Effects
Pubbl/distr/stampa	Newark : , : John Wiley & Sons, Incorporated, , 2023 ©2023
ISBN	9783527831517 3527831517 9783527831500 3527831509
Edizione	[1st ed.]
Descrizione fisica	1 online resource (496 pages)
Altri autori (Persone)	BodrogiPeter VinhTrinh Quang
Soggetti	Circadian rhythms Interior lighting
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Cover -- Title Page -- Copyright -- Contents -- Preface -- Acknowledgements -- Chapter 1 Introduction and Motivations -- 1.1 Introduction: A Historical Review. Current Issues -- References -- Chapter 2 Fundamentals of Lighting Technology - Basic Visual and Nonvisual Aspects -- 2.1 The Human Visual System. Visual and Non visual Signal Processing -- 2.2 Photometric and Colorimetric Quantities -- 2.2.1 Lighting Technology and Colorimetry -- 2.2.2 Colorimetry: CIE Tristimulus Values and CIE Chromaticity Diagram -- 2.2.3 Colour Appearance, Colour Matching, Colour Spaces, and Colour Difference Formulas -- 2.2.4 The CIECAM02 Colour Appearance Model -- 2.2.5 CAM02UCS Colour Space -- 2.3 Basics of the Nonvisual Aspects -- 2.3.1 Melatonin Suppression at Night -- 2.3.2 Modelling Melatonin Suppression at Night with the Circadian Stimulus (CS) and the Melanopic Action Factor -- 2.3.3 Spectral Sensitivity Functions According to the CIE -- 2.3.4 Correlations Among Circadian Stimulus CS, Melanopic Illuminance, and D65Equivalent Illuminance -- 2.3.5 Recommendations of Necessary Melanopic EDI (mEDI) Levels for

Optimum Sleep and Daytime Environments and Summary of this Chapter -- References -- Chapter 3 Basic Principles of HumanCentric Lighting and Integrative Lighting -- 3.1 Basic Questions, General Aspects -- 3.2 Input Variables - A Systematic Approach -- 3.3 Brain Processing for the Formation of Subjective and Objective Behavioural Variables -- 3.3.1 Visual Processing Systems -- 3.3.1.1 Horizontal Cells of Bipolar Cell Layer -- 3.3.1.2 Ganglion Layer -- 3.3.1.3 The Visual Pathway -- 3.3.1.4 Overall Network Structure of the Visual System: An Overview -- 3.3.2 Processing Centres and Transmission Pathways for Nonvisual Light Effects -- 3.3.2.1 Light Effects on Mood and Learning -- 3.3.2.2 General Light Effects on Cognition, Emotion, and Alertness. 3.3.2.3 Wavelength Dependence of Brain Activities on Light Exposure -- 3.4 'Timing System', Circadian Rhythm, and Sleep Behaviour -- 3.4.1 Questions -- 3.4.2 Timing System: Entrainment, Timing Role -- 3.4.3 PRC - Function, Phase Shift -- 3.4.4 Chronotypes, Sleep Behaviour -- 3.5 Output Variables of the Visual and Nonvisual Brain Processing Apparatus: A Systematics -- 3.6 Basic Aspects of HumanCentric Lighting/Integrative Lighting -- 3.7 Tools and Methods for Determining the Subjectively and Objectively Measurable Lighting Effects -- 3.7.1 Questionnaires for Comprehensive Subjective Determination of Indoor Lighting Quality -- 3.7.2 Questionnaires on Sleep Behaviour, Sleepiness, and Alertness: The Subjective Basis -- 3.7.3 Objective Methods and Tools -- References -- Chapter 4 Visual Performance-Work Performance -- 4.1 Status of Standardisation for Interior Lighting Using the Example of DIN EN 12464 -- 4.2 Visual Performance -- 4.2.1 Definition and Influencing Factors -- 4.2.2 Rea's RVP Model, 1991 -- 4.2.2.1 Experiments and Results from 1986 -- 4.2.2.2 Experiments and Results from 1988 and Modelling from 1991 -- 4.2.3 The Model of Kokoschka on the Data Basis of Weston -- 4.3 Work Performance -- 4.3.1 Assignment of Work Performance Aspects -- 4.3.2 Model for Stress Regulation Under Poor Lighting -- 4.3.3 Influence of Lighting Level on Mental Work -- 4.3.3.1 The Experiments of Boyce -- 4.3.3.2 The Experiments of Lindner -- 4.3.4 Influence of Lighting Levels on Work Performance in Industrial Workplaces -- 4.3.4.1 Literature Review Until 1971 -- 4.3.4.2 Lindner's Experiments in 1976 -- 4.3.5 Summary of the Significance of the Visual Performance and Work Performance Results - Preliminary Consequences for Indoor Lighting -- References -- Chapter 5 Modern Aspects of Brightness and Visual Clarity in the Context of Light Quality and Visual Performance. 5.1 Introduction -- 5.2 Experimental Method of the Subjective Study -- 5.3 Modelling Brightness and Visual Clarity -- 5.4 Summary -- References -- Chapter 6 Colour Quality and Psychophysical-Emotional Aspects, Laboratory Experiments -- 6.1 Introduction -- 6.2 Preferred Horizontal Illuminance Levels -- 6.3 Preferred Luminance Levels on the Wall for a Computer Monitor -- 6.3.1 Introduction -- 6.3.2 Experimental Method -- 6.3.2.1 Test Series 1: Determining the Most Comfortable Display Brightness at a Constant, Typical Wall Luminance -- 6.3.2.2 Test Series 2: Determining the Most Pleasant Luminance and Colour Temperature on the Wall with Constant Display Luminance -- 6.3.3 Evaluation of the Results -- 6.3.4 Summary -- 6.4 Preferred Colour Temperatures -- 6.4.1 Introduction -- 6.4.2 Experimental Method -- 6.4.3 Results and Discussion -- 6.5 Preferred Ranges of Colour Temperatures and Illuminances -- 6.5.1 The Nature of Illuminance and Colour Temperature -- 6.5.2 Illuminance and Colour Temperature in the Literature -- 6.5.3 Visual Experiments on the Combined Effect of Colour Temperature and Illuminance -- 6.5.4 Results: Combined Effect of Colour Temperature and Illuminance --

6.5.5 Dependence of Preferred Colour Temperature and Illuminance on Age and Gender for Activation and Relaxation -- 6.6 Preferred White Chromaticities -- 6.6.1 Introduction -- 6.6.2 Experimental Method -- 6.6.3 Results -- 6.7 Colour Quality -- 6.7.1 Perceptual Aspects of Colour Quality -- 6.7.1.1 Naturalness, Colour Fidelity (Colour Rendering) -- 6.7.1.2 Vividness -- 6.7.1.3 Chromatic Lightness (Brilliance) -- 6.7.1.4 Colour Preference -- 6.7.1.5 Memory Colours -- 6.7.2 Modelling Colour Preference, Naturalness, and Vividness -- 6.7.2.1 Modelling of Colour Preference, Naturalness, and Vividness at 750lx. -- 6.7.2.2 Modelling Colour Preference at 2000lx. Comparison of Colour Preference Between 750 and 2000lx -- 6.7.3 Consideration of Red Object Colours in the Colour Preference Model -- 6.8 Colour Preference for Skin Tone Lighting -- 6.8.1 Introduction -- 6.8.2 Method of the Colour Preference Experiment for Skin Tone Illumination -- 6.8.2.1 Spectral Measurement of Skin Tones -- 6.8.2.2 Characterisation of the Light Sources Used -- 6.8.3 Results of Subjective Scaling of Colour Preference for Skin Tone. Optimal Saturation Levels -- 6.9 Colour Rendering Indices and Their Semantic Interpretation -- 6.9.1 Introduction -- 6.9.2 Methodology of the Experiment on the Semantic Interpretation of the ColourRendering Indices -- 6.9.3 Results of the Experiment on the Semantic Interpretation of the ColourRendering Indices -- 6.10 Summary: Preliminary Consequences for Indoor Lighting -- References -- Chapter 7 New LightQuality Models from Laboratory Experiments and their Validation in Field Trials -- 7.1 Introduction -- 7.2 Input and Output Parameters of the LightQuality Models -- 7.2.1 Input Parameters -- 7.2.2 Output Parameters -- 7.3 Experimental SetUps for the LightQuality Models -- 7.4 Equations of the LightQuality Models -- 7.4.1 Brightness -- 7.4.2 Visual Clarity (VC) -- 7.4.3 Colour Preference (CP) -- 7.4.4 Scene Preference (SP) -- 7.5 Modelling with the Circadian Stimulus (CS) -- 7.5.1 Calculation Method -- 7.5.2 Brightness -- 7.5.3 Visual Clarity (VC) -- 7.5.4 Colour Preference (CP) -- 7.5.5 Scene Preference (SP) -- 7.5.6 Visualisation of the VC, CP, and SP Models in Contour Diagrams -- 7.6 Validation of the LightQuality Models (in Section ) in Three Museums in Japan -- 7.7 Summary -- References -- Chapter 8 Correlation Analysis of HCL Parameters and Consequences for the Measurement Methods of Non visual Effects.

8.1 General Consideration of the Correlation of the Parameters for Visual Performance, Colour Quality, and Nonvisual Effects -- 8.1.1 Introduction -- 8.1.2 Evaluation of the ColourRendering Indices -- 8.1.3 Assessments of the Brightness Parameters -- 8.1.4 Melanopic Effect and Colour Rendering -- 8.1.5 Correlation Between Further Parameters of Visual Performance, Colour Quality, and Nonvisual Effects -- 8.2 Structure and Categories of the Input Parameters of the HCL System -- References -- Chapter 9 Psychophysical-Emotional Aspects - Visual Comfort and Nonvisual Effects -- 9.1 Psychological-Emotional Aspects of the Effect of Light -- 9.1.1 Introduction -- 9.1.2 Psychological Effect of the Variable Lighting Situations, Spatial Effects -- 9.1.2.1 Field Trial -- 9.1.2.2 Laboratory Experiment -- 9.2 Space Impression, Space Brightness, and Visual Field Luminance -- 9.3 Visual Comfort: Flicker and Stroboscopic Effects -- 9.3.1 Pulse Width Modulation and Constant Current Control -- 9.3.1.1 Pulse Width Modulation (PWM) -- 9.3.1.2 Constant Current Regulation (CCR) -- 9.3.2 Flicker and Stroboscopic Effects -- 9.3.3 State of Research -- 9.3.4 Investigation -- 9.3.4.1 Settings -- 9.3.4.2 Parameters Investigated -- 9.3.4.3 Experimental Procedure -- 9.3.5 Results -- 9.3.5.1 Mean Subjective Values -- 9.3.6 Conclusion -- 9.4 Nonvisual

Light Effects During the Night Hours -- 9.4.1 Introduction -- 9.4.2  
Light Effects in Night Hours with Polychromatic White Light -- 9.4.2.1  
Results -- 9.4.3 Light Effects in Nocturnal Hours with Quasi  
monochromatic Light -- 9.4.4 Formation of a Metric to Characterise  
TimeDependent Melatonin Suppression -- 9.4.5 Determining the  
Potential Causes of Melatonin Suppression in Nocturnal Hours -- 9.4.6  
Lighting Aspects for Shift Work -- 9.5 Psychological and Health Aspects  
of Daylight -- 9.5.1 Psychological Aspects.  
9.5.2 Health Aspects of Daylight.

---

## Sommario/riassunto

This book provides an in-depth exploration of human-centric lighting (HCL) and integrative lighting systems, focusing on both visual and non-visual aspects of lighting technology. It covers the fundamentals of the human visual system, photometric and colorimetric quantities, and the impact of lighting on circadian rhythms and sleep behavior. Additionally, the book examines the principles of smart lighting, light quality models, and color quality. It aims to offer insights into the correlation between lighting parameters and their effects on visual performance, psychological well-being, and health. The book is intended for researchers, lighting designers, and professionals in the fields of architecture and engineering, seeking to understand and implement lighting systems that enhance human performance and comfort.

---