ERGONOMICS AND FACILITIES PLANNING FOR THE HOSPITALITY INDUSTRY

Daryl Ace V. Cornell, Ph.D., CGSP
Jocelyn A. Rivera-Lutap, DPA, FUAP

First Edition
ERGONOMICS
AND FACILITIES PLANNING
FOR THE HOSPITALITY INDUSTRY

Daryl Ace V. Cornell, PhD, CGSP
Jocelyn A. Rivera-Lutap, DPA, FUAP

Published & Distributed by:

REX Book Store
856 Nicanor Reyes Sr. St.
Tel. Nos.: 8736-0567/8733-6746
2161-65 Freedom Bldg., C.M. Recto Avenue
Tel. Nos.: 8522-4521/8522-4107
Manila, Philippines
www.rex.com.ph
RBS Ergonomics and Facilities Planning for the Hospitality Industry
2021 Edition
Classification: Worktext (04-TB-00042-0)

Published, copyrighted 2021, and distributed by Rex Book Store, Inc. (RBSI) with main office at 856 Nicanor Reyes Sr. St., Sampaloc, Manila / Tel. Nos.: 8736-0567, 8733-6746 • Customer Interaction Center / Tel. Nos.: 8857-7777, 8857-7743-44, 857-7794 to 97 / Email Address: cicsupport@rex.com.ph

RBSI Branches:

• MORAYTA: 856 N. Reyes Sr. St., Sampaloc, Manila / Tel. Nos.: 8736-0567, 8733-6746 • RECTO: 2161-65 Freedom Blvdg., C.M. Recto Ave, Sampaloc, Manila / Tel. Nos.: 8522-4521, 8522-4107 • CUBAO: Unit 10 UGF Donha Consolidacion Blvdg., Gen. Santos Ave, Araneta Center, Cubao, Quezon City / Tel. No.: 8911-1070 • SOHO-GREENFIELD: Unit 1 Lots 9 & 10 Soho Central Greenfield, Mandaluyong City / Tel. No.: 7751-4031
• NAGA: 1-1A Geronomio Blvdg., Barliin St., Sta. Cruz, Naga City / Tel. No.: 0454 472-8654 • CABANATUAN: Fortelera Blvdg., 1271 dal Pilar Ext., Sangitan East, Cabanatuan City, Nueva Ecija / Tel. No.: 0451 600-5668 • PAMPANGA: Rex Belcun Sentru Blvdg., Lot 103 Sto. Rosario St., Brgy. San Jose, Angeles City, Pampanga / Tel. No.: (045) 409-1612 • MAKATI: Unit UG-2, Star Centrum Blvdg., Gil Puyat Ave., Makati City / Tel. Nos.: 8818-536, 8893-3744 • ROCKWELL: 1st Flr., Ateneo Professional School, Rockwell Center, Bel-Air, Makati City / Tel. No.: 0956-4219711 • BAGUIO: Upper Gen. Luna cor. A. Bonifacio St., Baguio City / Tel. No.: (074) 422-0574 • TUGUEGARAO: 10 Arellano Ext. St., Brgy. Ugap Sur, Tuguegarao, Cagayan / Tel. No.: (078) 844-8072 • URDANETA: Zone 6, Pobladura, Urdaneta City, Pangasinan / Tel. No.: (075) 586-3975 • CAVITE: Block 4, Lot 20 Don Gregorio Heights 2 Zone, 1-A, Aguinaldo H-way, Dasmarinas, Cavite / Tel. No.: (046) 416-1824 • LIPA, BATANGAS: Purok 5B Panisiningin, Tambo, Lipa City / Tel. No.: (043) 741-6614 • PALAWAN: Abad Santos St. cor. Valencia St., Puerto Princesa City, Palawan • MARIKINA: Book Museum Um Elphilinology Center, 127 Dao St., Marikina Heights, Marikina City / Tel. No.: 7900-0841 • CAVITE: Rex Habitat and Cultural Display Area, Block 5 Lot 6 Cityview 485, Brgy Tanzuan, Tanza, Cavite • BATAanes: DDB Habitat Lodging House - Batanes, Iloilo St., Barangay Kayuvalagan 3900 Bacolod, Batanes / Tel. No.: 09101332581

VISAYAS

• TAGOLOB: Brgy. 78 Marasbaras, Tacloban City / Tel. No.: (053) 523-8976, (053) 523-1784 • ILILO: No. 75 Brgy. San Isidro Lopez-Jaena, Jaro, Iloilo City / Tel. No.: (033) 508-8780, (033) 329-0336 • BACOLOD: No. 28 Quezon Ave., Purok Inmaculada, Brgy. 36, Bacolod City / Tel. No.: (034) 701-5585 • CEBU: 11 Sanciangko St., Cebu City / Tel. No.: (032) 416-9684, (032) 254-6773

MINDANAO

• DAVAO: 156 A.C. M. Recto St., Davao City / Tel. No.: (082) 300-5422, (082) 305-5772, (082) 221-0722 • ZAMBOANGA: Don Alfaro St., Brgy. Tettuan, Zamboanga City / Tel. No.: (062) 955-0887 • CAGAYAN DE ORO: 1. Sergio St. cor. Vamenta Blvd., Carmen, Cagayan de Oro City / Tel. No.: (088) 638-6775 • GENERAL SANTOS: Aparente St., Dadiangas Heights, General Santos City / Tel. No.: (083) 304-8512, (083) 554-7102

www.rex.com.ph

No portion of this book may be copied or reproduced in books, pamphlets, outlines, or notes—whether printed, mimeographed, typewritten, photocopied, or in any form—for distribution or sale, without the written permission of the Publisher and Author/s. The infringer shall be prosecuted in compliance with copyright, trademark, patent, and other pertinent laws.

Internet Link Disclaimer

Rex Book Store, Inc. (RBSI) is not responsible for the accuracy, legality, or content of the external sites and for that of subsequent links. These links are being provided as a convenience and for informational purposes only. Although verified at the date of publication, the publisher cannot guarantee that these links will work all of the time nor does it have control over the availability of linked pages.

Moreover, the publisher does not warrant sites or the servers that make them available are free of viruses or other harmful components. Rex Book Store, Inc. (RBSI) does not warrant or make any representations regarding the use or the results of the use of the materials in these sites or in third-party sites in terms of their correctness, accuracy, timeliness, reliability, or otherwise.

RBSI’s Book Association Memberships: Philippine Booksellers Association, Inc. (PBAI); Book Development Association of the Philippines (BDAP); Philippine Educational Publishers Association (PEPA); Book Exporters Association of the Philippines (BEAP); Academic Booksellers Association of the Philippines (ABAP); Children’s Literature Association of the Philippines, Inc. (CLAPI); Asian Publishers Resources Center (APRC)

PEPA’s International Book Association Memberships: International Publishers Association (IPA); Asia Pacific Publishers Association (APPA); ASEAN Books Publishers Association (ABPA); Philippine Book Publishing Development Federation (PBP)

Printed by REX PRINTING COMPANY, INC.
84 P. Florentino St., Sta. Mesa Heights, Quezon City / Tel. No.: 8857-7778
# CONTENTS

**Preface** .................................................................................................................................................. v

**Chapter 1**  Understanding Hospitality Facilities Planning and Ergonomics  ......................... 1

**Chapter 2**  Principles of Interior and Exterior Design ................................................................. 7

**Chapter 3**  Workstation Facilities Design and the Hospitality Industry ........................................ 22

**Chapter 4**  Repetitive Task, Task Design, and Risk Assessment .................................................... 35

**Chapter 5**  Job Demands, Health, and Well-being ............................................................................. 49

**Chapter 6**  Site Selection .................................................................................................................... 61

**Chapter 7**  Planning Specifics for Hospitality and Tourism Property ............................................... 73

**Chapter 8**  Space Allocation .............................................................................................................. 80

**Chapter 9**  Energy and Electricity ..................................................................................................... 99

**Chapter 10**  Water and Wastewater Systems .................................................................................... 108

**Chapter 11**  Heating, Ventilation, and Air-conditioning ............................................................... 119

**Chapter 12**  Environment and Sustainability .................................................................................... 134

**Chapter 13**  Safety, Security, and Resiliency ..................................................................................... 145

**References** .......................................................................................................................................... 163

**Index** ................................................................................................................................................. 175
ABOUT THE BOOK

Ergonomics and Facilities Planning for the Hospitality Industry will help inculcate knowledge and skills in facilities planning and design in the students to ensure that the organization's work environment fits the industry professional. This textbook covers an introduction to the different hospitality industry facilities, planning and designing workstations to create efficient and effective workplaces, selecting workstation furnishings to provide flexibility and adaptability for workers, and ensuring technical requirements in the study of facilities planning, design, and layout.

ABOUT THE AUTHORS

Daryl Ace V. Cornell, Ph.D., CGSP, is a faculty researcher and associate professor from the Polytechnic University of the Philippines-Manila and a part-time faculty member in his alma mater, San Sebastian College-Recoletos, and in the graduate school program of the Lyceum of the Philippines University-Manila. He is also hailed as an adjunct faculty member of the University College Sedaya International (UCSI) University in Sarawak, Malaysia. He is the former president of the Philippine Association of Researchers for Tourism and Hospitality (PARTH), Inc. and an associate member of the Division VIII (Social Sciences) of the National Research Council of the Philippines-Department of Science and Technology. Dr. Cornell is also an active researcher, a prolific author, a resource person, and a Certified Guest Service Professional in the academic field of tourism and hospitality.

Jocelyn A. Rivera-Lutap, DPA, FUAP, is an associate professor at the Polytechnic University of the Philippines-Manila, College of Architecture, Design and the Built Environment. She is a graduate of BS Architecture at the Far Eastern University-Manila and MS in Architecture at the University of Santo Tomas. She earned her doctorate in public administration from the Eulogio "Amang" Rodriguez Institute of Science and Technology. She was appointed as chairperson of the Department of Architecture and Interior Design in PUP-Manila from 2004 to 2006 and from 2013 to 2018 and became dean of the college. She was bestowed the title "Fellow" under Education by the United Architects of the Philippines. Her architectural practice ranges from single structures to commercial/residential and government complexes. She is a founding member of the International Network for Traditional Building, Architecture and Urbanism, Philippine chapter and the Green Restorative Actions and Sustainable Solutions. She was a special lecturer at the College of Architecture, University of Santo Tomas and College of St. Benilde. Her researches include bamboo architecture, education, environmental sustainability, and material recovery, which were presented locally and internationally and most were published in international publications.

Outcomes-Based Education (OBE) has become a powerful and engaging way of reforming the Philippine educational system. The highlight of OBE is the product — to develop the ideal graduates.

The Rex Book Store, Inc. tertiary textbooks are designed in compliance with the Commission on Higher Education’s (CHED) requirements for OBE learning materials. The content, learning activities, and exercises aim to guide students to learn important knowledge and acquire skills to meet the CHED’s prescribed competencies in specific programs.

www.rexestore.com

your online book catalog and book store


WE VALUE YOUR INPUT.

For comments or inquiries, email the Customer Interaction Center at cicsupport@rex.com.ph
For more information about our products and services, please visit www.rex.com.ph