

# Preface

The International Elevator and Escalator Symposium (IEES) is organized by Liftinstituut Solutions B.V. and Elevator World Inc., fully independent, well-known companies that have many years of experience in the lift market.

The second annual IEES event was held in Las Vegas, Nevada, on December 3-4, 2019. Professionals from the elevator and escalator industry, architects, developers and owners were invited to attend the program, which explored the theme of Safety of Elevators and Escalators During Their Life Cycle: Maintenance and Inspections. Presentations were delivered by 20 international experts over the course of the two-day event, which ensured a platform for gaining knowledge and meeting with professionals. This book contains the full papers delivered during the symposium, minus one, in the order in which they were presented. Additionally, IEES offered technology companies the opportunity to showcase their new projects and product details in an expo setting.

The IEES is an annual event held in a different country each year, always presented in the English language. The third annual IEES event is planned for December 7-8, 2020, in Amsterdam, The Netherlands.

The IEES is proud to donate a portion of the proceeds from this event to the Elevator Escalator Safety Foundation (EESF), the leading resource for educational programs that teach children and adults how to properly ride elevators, escalators and moving walks. EESF is a nonprofit organization founded in 1989 in the United States by the National Elevator Industry, Inc. (*NEII*<sup>®</sup>), the National Association of Elevator Contractors (NAEC), NAESA International and Elevator World, Inc. For more information on this organization and its programs, please visit [www.eesf.org](http://www.eesf.org).

Organizing companies Elevator World Inc. and Liftinstituut Solutions B.V. are longtime industry advocates. Elevator World has been the voice for the international building transportation industry since 1953. Readers and advertisers are dedicated to Elevator World's network of magazines and websites because they are considered the most credible sources of industry news and information, covering all corners of the "elevator world". The most well-respected professionals in the industry help write, review and influence Elevator World publications, providing readers with news and market information they can trust.

The independent and highly skilled consultants at Liftinstituut Solutions B.V. work hard every day to make sure millions of people around the world can use vertical transportation safely, comfortably, and without any problems. Motivated by safety and a passion for technology, Liftinstituut helps building managers and owners, as well as producers worldwide, to make the right decisions on construction, maintenance and modernization. Its focus is not only on the installation, but also on its environment.

## Table of Contents

The Role of Maintenance and Inspection in Risk Reduction . . . . .	9
<i>by Louis Bialy, PE, President, Louis Bialy and Associates, U.S.A.</i>	
Innovative Designs: Challenges for Inspections and Maintenance? . . . . .	19
<i>by Robert Kaspersma, Product Certification Specialist, Liftinstituut, The Netherlands</i>	
Elevator Maintenance and Inspection: Recommendations, Regulations and Codes 1880-1940. . . . .	27
<i>by Dr. Lee E. Gray, University of North Carolina at Charlotte, U.S.A.</i>	
Contributing Factors That Can Lead to Diminished Safety of Elevators and Escalators During Their Life Cycle . . . . .	37
<i>by Max Guijt, Managing Director, Shanderry Elevator &amp; Escalator Consultants Ltd., Ireland</i>	
Maintenance, the Correct Approach to Raise the Quality . . . . .	41
<i>by Erol Akçay, Regional Technical Director, Liftinstituut Solutions, U.A.E.</i>	
Safety in Vertical Transportation Systems – An Enduring Journey . . . . .	47
<i>by M.J. Mohamed Iqbal, Managing Director, Toshiba Elevators, U.A.E.</i>	
U.S. Elevator Inspections: Judged by the Jurisdiction . . . . .	53
<i>by Charlie Slater, Director of Operations, ATIS Elevator Inspections, LLC, U.S.A.</i>	
Remote Maintenance Service of Mitsubishi Elevators . . . . .	59
<i>by Dr. Naohiko Suzuki, Mitsubishi Electric Corp., Japan; Shin-ichi Kuroda, Mitsubishi Electric Corp., Japan; and Kenji Serizawa, Mitsubishi Electric Building Techno-Service Co., Ltd., Japan</i>	
Elevator and Escalator Industry Cybersecurity Best Practices . . . . .	69
<i>by Kevin L. Brinkman, Vice President, Codes &amp; Safety, NEII, U.S.A., and Barry Blackaby, Managing Director, B. Blackaby and Associates LLC, U.S.A.</i>	
Technological Influence Over Sustainable Maintenance . . . . .	81
<i>by Onur Artikoğlu, New Equipment Sales, Marketing and Operations Director, Otis Turkey, Turkey</i>	
Maximize Reliability and Continuity of Building-Related Transport Solutions by Monitoring, Using Insights and Applying Predictive Maintenance . . . . .	85
<i>by Reinier Geradts, Managing Director, DLR Adviesgroep BV, The Netherlands, and Jeroen Bazuin, DLR Adviesgroep BV, The Netherlands</i>	
Faulty Door Contact Circuit Monitoring . . . . .	93
<i>by Peter A. Novak, PE, Senior Electrical Engineer, GAL Manufacturing Co. LLC, U.S.A., and R. Carl Burch, PE, Manager, National Field Engineering, GAL Manufacturing Co. LLC, U.S.A.</i>	
Increased Safety and Predictive Maintenance by a Door Driver with Wireless Connectivity and Remote Monitoring . . . . .	101
<i>by Emre Koroğlu, Deputy General Manager, Merih Asansör A.Ş, Turkey and Mehmet Emin Ercan, R&amp;D Engineer, Merih Asansör A.Ş, Turkey</i>	
Safety Inspection Schemes for Elevators Around the World. . . . .	109
<i>by Manuel Diez, Global Field Manager, TÜV Rheinland Group, Germany</i>	

Successful Implementation of a Mandated VT Periodic Inspection and Testing Program to Improve Safety and Reliability Emulating the NYC Model . . . . . 119  
*by Robert Cuzzi, President/Principal, VDA (Van Deusen & Associates), U.S.A., and Harry Vyas, Senior Director of Compliance, VDA (Van Deusen & Associates), U.S.A.*

Fireman and Evacuation Elevators and MRLs . . . . . 133  
*by TAK Mathews, Principal Consultant, TAK Consulting Pvt. Ltd., India*

3-Dimensional Hoistway Door Protection . . . . . 141  
*by John W. Koshak, Head and Founder, Elevator Safety Solutions, LLC, U.S.A.*

Meeting Code Changes With Game Changing Technology . . . . . 147  
*by Cornelius Walls, Global Vice President, Formula Systems North America, Inc., U.S.A.*

Development of a Real-time Elevator Brake Monitor . . . . . 153  
*by Albert So, International Association of Elevator Engineers, Department of Electrical & Electronic Engineering, The University of Hong Kong; and K.H. Lam and C.T. Kong (Andy), Department of Electrical & Electronic Engineering, The University of Hong Kong*