

CONSTRUCTION RESEARCH CONGRESS 2022

*Computer Applications, Automation, and Data
Analytics*

SELECTED PAPERS FROM THE CONSTRUCTION
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Preface

The Construction Research Congress (CRC) 2022 Organizing Committee, Virginia Polytechnic Institute & State University (Virginia Tech), the Construction Research Council, and the Construction Institute (CI) of the American Society of Civil Engineers (ASCE) are pleased to present the CRC 2022 Proceedings. CRC is one of the leading international conferences in the area of construction engineering and management. The Congress is held every two years, which provides a university the opportunity to serve and host colleagues across the world for the interactive exchange of ideas, knowledge and research findings. CRC 2022 was hosted by Virginia Tech and its Vecellio Construction Engineering and Management Program (VCEMP) in the Department of Civil and Environmental Engineering. The conference was held in Arlington, VA on March 9-12, 2022. CRC 2022 was part of the first-ever joint conference of the Construction Research Congress and the Construction Institute Summit. This combination of academic and industry experts promoted wide-ranging discussions about finding real solutions to the most pressing societal and industry problems.

The theme of the CI & CRC Joint Conference was: "Next Generation Construction." The joint conference's technical program provided insights on the latest research and industry practices that will lead to next generation techniques, technologies, and strategies to meet the many 21st century challenges in construction and the built environment. This unique setting allowed academic and industry peers from around the world to share insights with one another to promote progress in both research and practice.

The Conference Proceedings contain 405 peer-reviewed technical papers, which were developed from over 690 abstract submissions. All submissions went through a two-step review process with a minimum of two external reviewers per paper, by a scientific community of hundreds of international construction experts. The work was exhibited at the conference in short presentations. The resulting proceedings are divided into four volumes:

- Volume I: Infrastructure Sustainability and Resilience (69 papers)
- Volume II: Computer Applications, Automation and Data Analytics (144 papers)
- Volume III: Project Management and Delivery, Controls, and Design and Materials (113 papers)
- Volume IV: Health and Safety, Workforce, and Education (79 papers)

On behalf of the Organizing Committee, Virginia Tech, the Construction Research Council and the ASCE Construction Institute, we hope that the CRC 2022 proceedings reflect the vitality of the first-ever CRC and CI Joint Conference as well as our community's research and its potential to better our industry.

Michael J. Garvin, PhD, PE, NAC
Farrokh Jazizadeh, PhD
Tripp Shealy, PhD

Organizing Committee
Virginia Tech

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