

**Guest Editors:**

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# Call for Papers

## Special Collection on Innovations in Architectural and Structural Glass



### Aims & Scope

With the densification and ever-growing complexity of urban areas, the challenges in the field of architectural glass are more holistic than ever. The increasing awareness of our society's footprint on the environment is becoming a top design consideration, impacting material sourcing, sustainability in its resilience and economical aspects, and the necessary reevaluation of responsible design philosophies, from inception through construction and maintenance to the potential dismantling of a façade. These constraints are striking stunning innovations in our field, where high-tech glazing products for high and responsible performance is the new norm. We are seeing significant development in structural glass with advances in design, glass composites curved glass, novel connection technologies, and advanced design philosophies for newly expanded scales, ranging from ultra-thin and flexible, to jumbo. In parallel, these systems necessarily combine with other dimensions of "adjacent spaces" innovation, for their inclusion in systems of high thermal performance, or photovoltaic capacity, or related glass processing, which hold their own structural and manufacturing challenges. Health and comfort, which are the original drivers for the use of glass, are finally quantifiable with the advancement of research and normalization in the fields of thermal and visual comfort, glare, acoustics, wellness, materials declaration, and substitutions.

This Special Collection aims at gathering high quality papers that address innovation of glass in architecture and offer notional perspective on its 360-degree impact on the built environment, such as the following nonexclusive topics as they relate to all types of architectural and structural glass, curtain walls and windows:

- Innovations in structural design of glazing systems and detailing philosophy
- Composite glazing systems (e.g., glass-glass, glass-polycarbonate lamination) for gravity load bearing and lateral stability of facades
- Long-term performance, durability, life-cycle assessment, environmental certifications
- Design, fabrication, construction, and maintenance of modular and unitized systems
- Developments in manufacturing and construction technologies (automation, data tracking, sustainable design, BIM, and digital fabrication)
- Economics and cost considerations, market barriers, commercialization of innovative/sustainable glazing systems, energy retrofit
- High energy performance (IGUs, electrochromic glass, vacuum glazing, harvesting systems, zero energy design, photovoltaic integration double skin façade systems, and glazing for passive house design)

*continued*

# Journal of Architectural Engineering

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- Fire design and performance
- Health and visual comfort, Intelligent sensing, control and user interaction
- Acoustics performance (indoors/outdoors, flanking spaces, inter-story)
- Multi-objective optimization, complex geometry rationalization, automation, big data
- Kinetic systems and flexible glass, cold/warm/hot bending technologies
- Knowledge sharing, educational tools and opensource development
- Smart glazing technologies, active façade, and intelligent envelope systems

### Submission Guidelines

Submissions will be accepted on a rolling basis. Authors should follow the guidelines for ASCE journal submission and submit manuscripts electronically through the journal's Editorial Manager website: <https://www.editorialmanager.com/jrnaeeng/default.asp>

Authors should prepare their manuscripts according to guidelines found in "Publishing in ASCE Journals: A Guide for Authors" (<https://ascelibrary.org/doi/book/10.1061/9780784479018>).

When submitting, authors should indicate in the submission questions that the paper is being submitted in response to this call for papers (Special Collection: Innovations in Architectural and Structural Glass).

Please note that this is an invitation to submit papers for peer review and does not imply acceptance for publication. Acceptance of submitted papers depends on the results of the normal refereed peer review process of the journal.

All accepted papers submitted through this solicitation will be published in regular issues of the journal as they are accepted, and they will be added to a special online collection (which is similar to a print version of a special issue) and will be indexed for citations like other regular journal papers.