

## Editorial: Systems for Construction Management

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## Editorial: Systems for Construction Management

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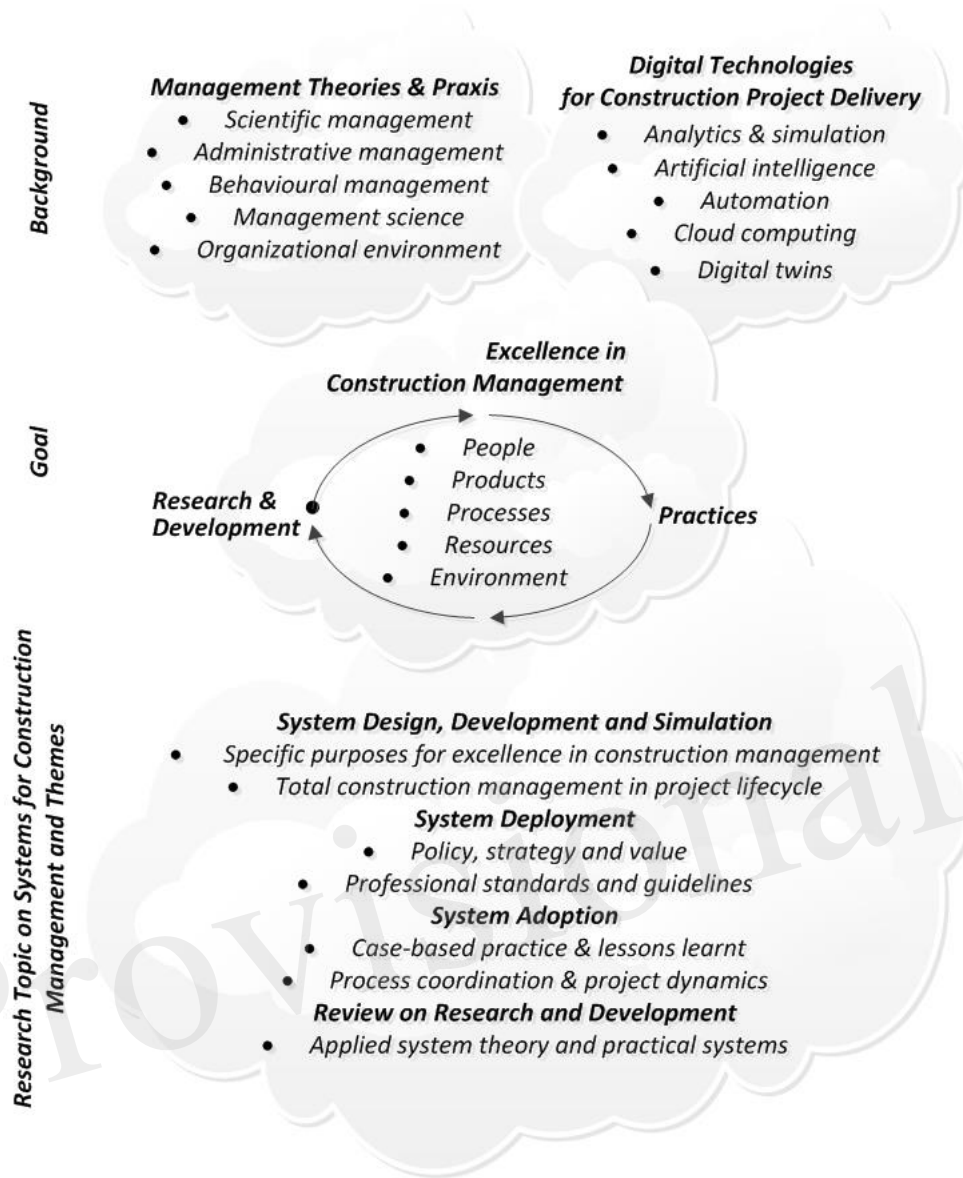
9 **Keywords:** systems, construction management.

### 10 **Background**

11 The continued advances of management theories and praxis as well as digital technologies have  
12 constantly transformed construction project delivery around the world. Practices at many construction  
13 project based enterprises show the importance of technical innovations, for which multidisciplinary  
14 research and development (R&D) of systematic solutions is key drivers towards leadership and success.  
15 As demonstrated by Ghosh and Robson (2015) in their descriptive case study on project management  
16 at the Empire State Building project, the connection from new research to the past practice is powerful  
17 to derive and validate the efficacy of the *Lean Delivery System*, as an example of advanced management  
18 system, which is widely recognized essential to produce work process excellence (Patty and Denton,  
19 2010). Under grand challenges (Chen, 2019) in construction management (CM) via continuous  
20 enhancement to efficacy and performance, it is important for R&D to be in adaptive, responsive, and/or  
21 proactive modes through using state-of-the-art theories and technologies to improve the performance  
22 of project-based managerial systems and practices.

23 The Research Topic on [Systems in Construction Management](#) is proposed and coordinated by the two  
24 editors from 2018 to 2020. Figure 1 illustrates its background, goal, and themes. It aims to promote  
25 technical advances in the development and use of systems in CM for built environment project, and to  
26 showcase new solutions through multidisciplinary practice-oriented R&D. The call for papers (CfP)  
27 was circulated through invitations by emails to experienced academics and posts to LinkedIn groups,  
28 and it is open for both experience sharing and rigorous independent research that translate knowledge  
29 gained from R&D to inform enhanced practice in CM towards excellent performance target in built  
30 environment project delivery.

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32 **FIGURE 1** | Themes of the Research Topic on Systems for Construction Management.

## 33 **Five articles**

34 This themed collection consists of five full-length papers, which present professional insights on and  
35 novel research into a range of topics relating to systems for construction management. A brief  
36 introduction for these published articles is given below.

37 [Francis](#) (2019) in Canada presents his research into chronographical spatiotemporal scheduling  
38 optimization for building projects. This paper describes a hybrid solution based on spatiotemporal  
39 techniques to combine graphical, procedural, and algorithmic aspects so as to ensure the continuity in  
40 the use of spaces and teams, as well as linear production in construction project management.

41 [Larsen et al.](#) (2019) in Denmark present their research into mass customization in the house building  
42 industry through literature review and discussion. This paper explores existing research into mass  
43 customization in the house building industry to identify current knowledge gaps and potential  
44 research directions.

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45 [Chen, Agapiou and Li](#) (2020) in UK and China respectively present a benefits prioritization analysis  
46 on adopting BIM systems against major challenges in megaproject delivery. This paper presents a  
47 recent research and development experiment on benefits analysis for adopting building information  
48 modeling/management (BIM) systems, and it focuses on a new quantitative approach to benefits  
49 prioritization to support decision making against major challenges in megaproject delivery.

50 [Gondo and Miura](#) (2020) in Japan present their research into accelerometer-based activity recognition  
51 of workers on construction sites. This paper details a method and experimental trials on the use of  
52 accelerometer to detect the motion of workers on site with regard to improving productivity or safety.

53 [Arrotéia, Freitas and Melhado](#) (2021) in Brazil present their research into barriers to BIM adoption in  
54 Brazil. This paper presents a questionnaire-based survey and case study about BIM adoption at one  
55 large Brazilian construction company to inform BIM pervasive project delivery.

### 56 Acknowledgments

57 This research topic has attracted 25,324 views around the world as of 31 July 2021. The two editors  
58 of this research topic appreciate the recognition to and interest in this themed issue at [Frontiers in](#)  
59 [Built Environment](#), and would like to thank all authors who have made great efforts to participate  
60 with their valuable manuscripts to support. It is expected that this themed issue is efficacious to  
61 support the growth of the [Construction Management section](#) at [Frontiers in Built Environment](#), and  
62 more academic researchers and professional practitioners will come to share new knowledge.

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64 supports in the peer review process of this themed issue, and they are:

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- 68 • [Heap Yih Chong](#), Curtin University, Australia
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- 70 • [Youngsoo Jung](#), Myongji University, South Korea
- 71 • [Marina Marinelli](#), The University of Leicester, United Kingdom
- 72 • [Joaquín Ordieres Meré](#), The Polytechnic University of Madrid, Spain
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- 76 • [Jinyue Zhang](#), Tianjin University, China

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83 publications.

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