

Cover Page on Survey Monkey

To understand the current state of design documents and its impact on project delivery efficiency, Ryerson Institute for Infrastructure Innovation (RIII) was commissioned to undertake this study. The study is supported by a number of construction associations as well as Mitacs, a national research funding agency that supports applied research and industry-academia collaboration.

As a part of the study, this nation-wide online survey aims to collect data and opinions from construction professionals on questions relating to the quality of design documents. Professionals representing project clients, architects and engineers, as well as general contractors and subcontractors are invited to participate in this survey.

Your participation is critical to the success of this project. The survey results will be confidential, and no identifiers of any participant will be published.



Canadian
Construction
Association



General Instructions

This survey is divided into three sections. The first section comprises four basic background questions. The second section focuses on project-specific questions based on the most recently completed project in which you participated prior to the COVID-19 lockdown. It would be beneficial to have project details such as contract, cost and schedule details readily available to facilitate the completion of this survey. The third and last section seeks your opinion in relation to the trend of design document quality. The survey should take approximately 15 minutes to complete.

Section 1: Background

1. How many years have you been working in the construction industry?
 - Less than 5 years
 - Over 5 years and less than 15 years
 - Over 15 years
2. In which construction sector have you worked? (select all that apply)
 - Residential Building
 - ICI Construction (Industrial, Commercial and Institutional)
 - Transportation and Transit (e.g. roads, bridges, transits, airports)
 - Heavy Industrial Construction (e.g. water treatment, mining, chemical processing, power generation)
 - Municipal Utilities/Civil (e.g. sewers, water mains)
 - Other (please specify)
3. Which category best describes your current role? (please select one)
 - Owner – Project Manager
 - Owner – Facility Operator
 - Owner’s Construction Manager
 - Project Investor
 - Consultant – Architect
 - Consultant – Engineer
 - Consultant – Other (e.g. cost, environmental)
 - General Contractor
 - Subcontractor
 - Supplier/Manufacturer
 - Other (please specify)
4. How many years have you been working in the role identified in the previous question?
 - Less than 5 years

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- Between 5 and 15 years
- Over 15 years

Section 2: Project Specific Questions Based on Your Most Recent Project

The questions in this section seek to elicit your experience of the most recent project you have been involved in up to substantial performance/completion prior to the COVID-19 lockdown. All your answers in this section should be based on this one project. For questions where you are uncertain of the answer, please provide your best estimate.

5. In which year was the project substantially performed/completed?

[Dropdown]

Before 2015

2015

2016

2017

2018

2019

2020

6. Which sector did the project fall into?

- Residential Building
- ICI construction (Industrial, Commercial and Institutional)
- Transportation and Transit (e.g. roads, bridges, transits, airports)
- Heavy Industrial Construction (e.g. water treatment, mining, chemical processing, power generation)
- Municipal Utilities/Civil (e.g. sewers, water mains)
- Other (please specify)

7. Where was the location of this project?

[Dropdown]

Alberta

British Columbia

Manitoba

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New Brunswick

Newfoundland and Labrador

Nova Scotia

Ontario

Prince Edward Island

Quebec

Saskatchewan

Northwest Territories

Yukon

Nunavut

8. What was the value of the original construction contract for this project? (CAD\$ millions, HST excluded)
9. What was the original duration specified in the construction contract? (months)
10. What was the project delivery model used in this project?
 - Traditional Design-Bid-Build
 - Design Build (Non-Public-Private Partnership)
 - Construction Management (at Risk)
 - Multi-Prime (the owner contracts directly with separate specialty contractors for specific and designated elements of the work, rather than with a single general or prime contractor)
 - Public-Private Partnerships (BF, DBF, DBFM, DBFMO)
 - Integrated Project Delivery
 - Engineering, Procurement and Construction
 - Other (please specify)
11. Did this project have any bid cancellations or extensions?
 - Yes
 - No (skip question 12)
 - Not sure (skip question 12)
12. What were the reasons for the bid cancellations or extensions? (select all that apply)
 - Incomplete bid documents
 - Scope changes
 - Late issuance of changes
 - Insufficient number of bids

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- Financing issues
 - Others (please specify)
13. In comparison with projects of similar dollar value, type and complexity, how would you categorize the number of addenda issued during the bidding stage of this project?
- None (Skip Q14, Q15)
 - Fewer than average
 - Average
 - More than average
 - Not applicable (e.g. the work was not obtained by bidding) (Skip Q14, Q15)
14. In comparison with the original bid documents, how would you categorize the cost impact of addenda issued during the bidding stage of this project?
- Insignificant
 - Average
 - Significant
 - Not applicable (e.g. work not awarded by bidding)
15. How would you describe the time frame provided for you to respond to the addenda during the bidding stage?
- Insufficient
 - Reasonable
 - Longer than needed
 - Not sure
16. In comparison with projects of similar dollar value, type and complexity, how would you categorize the number of Requests for Information (RFIs) that were related to design drawings and specifications during the **bidding** stage?
- None (Skip Q17)
 - Fewer than average
 - Average
 - More than average
 - Not applicable (e.g. the work was not obtained by bidding) (Skip Q17)
17. What was your level of satisfaction with the responses to the RFIs that were related to design drawings and specifications during the **bidding** stage?
- Satisfied
 - Neutral (neither satisfied nor unsatisfied)
 - Unsatisfied
 - Not applicable

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18. In comparison with other projects of similar dollar value, type and complexity, how would you categorize the number of Requests for Information (RFIs) that were related to design drawings and specifications during the **construction** stage?
- None (Skip 19)
 - Fewer than average
 - Average
 - More than average
 - Not sure (Skip 19)
19. What was your level of satisfaction with the responses to the RFIs that were related to design drawings and specifications during the **construction** stage?
- Satisfied
 - Neutral (neither satisfied nor unsatisfied)
 - Unsatisfied
 - Not applicable
20. In comparison with projects of similar dollar value, type and complexity, how would you categorize the number and scope of Change Orders and Change Directives during the **construction** stage?
- None
 - Fewer than average
 - Average
 - More than average
 - Not sure
21. In comparison with projects of similar dollar value, type and complexity, how would you rate the quality (completeness, clarity and accuracy) of the technical specifications used in this project in the following areas? For each area selected, indicate your evaluation on a scale of 1 for excellent to 5 for very poor.
- Provisions in the general requirements (Division 1)
 - General specifications
 - Product specifications
 - Execution specifications (specified standard of workmanship)
22. In comparison with projects of similar dollar value, type and complexity, what was the level of coordination between various design disciplines (e.g. architectural, structural, mechanical, electrical) in this project?
- Poorer than average
 - Average
 - Better than average
 - Not sure

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23. Comparing the technical specifications to the construction drawings, which had more issues on Errors and Omissions?

- Technical specifications
- Construction drawings
- Not sure

24. Comparing the *actual* substantial performance/completion date with the substantial performance/completion date stipulated in the original contract documents, when was this project completed?

- Ahead of schedule (skip question 27 and 28)
- On time (skip question 25, 26, 27, 28)
- Behind schedule (skip question 25 and 26)
- Not sure (skip question 25, 26, 27, 28)

25. If ahead of schedule, by how much time approximately? (months)

26. If ahead of schedule, list 3 factors that contributed to this achievement.

27. If behind schedule, by how much time approximately? (months)

28. To what extent do you consider the following factors contributed to schedule delays during the construction of this project? For each factor selected, indicate your evaluation on a scale of 1 for a minor extent to 5 for a major extent.

- Client Requests
- Design Issues (e.g. errors and omissions, coordination, code compliance, authorities having jurisdiction questions)
- Construction Issues (e.g. constructability, availability of labour, deficient work, scheduling)
- Unforeseeable/Site Conditions (e.g. subsurface conditions, soil contamination)
- Others (please specify)

29. Did the final project construction cost exceed the original contract value?

- Yes
- No (skip question 30)
- Not sure (skip question 30)

If Yes, by how much did it increase? (0-10%;11%-30%; 31%-50%; over 50%)

30. To what extent do you consider the following factors contributed to the cost increase during construction? For each factor selected, indicate your evaluation on a scale of 1 for a minor extent to 5 for a major extent.

- Client Requests

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- Design Issues (e.g. errors and omissions, coordination, code compliance, authorities having jurisdiction questions)
- Construction Issues (e.g. constructability, availability of labour, deficient work, scheduling)
- Unforeseeable/Site Conditions (e.g. subsurface conditions, soil contamination)
- Others (please specify)

31. What was your firm's construction contingency allowance in the original contract value for this project?

- 0-5%
- 6-10%
- 11-15%
- Over 15%
- Not sure

32. In comparison with projects of similar dollar value, type and complexity, how would you rate the extent of inefficient use of resources (time, money and materials) caused by design issues during the construction stage of this project?

- Higher than average
- Average
- Lower than average
- No waste
- Not sure

33. A number of recommendations have been identified by researchers that could improve construction productivity. Based on what you experienced during this project, please select and rank 3 recommendations from the list below that you believe would have benefited your project the most. Identify them in the order of effectiveness using 1 for the most effective recommendation and 3 for the least.

- Use a different delivery model
- Limit the number of scope changes
- Improve the quality of the bid/design documents
- Improve collaboration and communication between stakeholders
- Build trust between stakeholders
- Improve the availability of resources (material and labour)
- Have more experienced personnel
- Use BIM tools and technologies
- Use prefabricated components
- Others (please specify)

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Section 3: Opinion

The following question seeks your opinion on the trend in the quality of design documents.

34. Based on your years of work experience in the construction industry, what is your opinion of the overall quality of design documents over the last 10 years?

- Getting better
- Remaining about the same
- Getting worse
- Not sure