3rd July 2021

SUBMISSION TO: Inquiry into procurement practices for government-funded Infrastructure

SUBMISSION BY: Wildermuth Consulting Pty Ltd

(Robert Wildermuth OAM)

Key Issue: The one issue costing the Australian Construction Industry circa $20 Billion per annum

AUTHOR'S BRIEF BACKGROUND

1. The author is an Adjunct Associate Professor at the University of Southern Queensland and a professional quantity surveyor with over 45 years' experience in the construction of buildings and infrastructure.

2. The author's experience has been gained working for Clients and Contractors both in Australia and internationally.

3. The Author's focus or specialisation is in the commercial stream encompassing both pre-contract (tendering and forms of contract) and post-contract (project management, contract administration, claims & risk management, and dispute resolution).

PURPOSE OF THE SUBMISSION

4. This submission is provided to share the author's knowledge and perspective in relation to "procurement practices for government-funded Infrastructure" and is presented in five (5) sections with the following aims:

   A. **VALUE FOR MONEY** – Definition and general discussion;

   B. **CURRENT ISSUES** - highlighting some of the current issues adversely impacting the "value for money" aspect of construction costs in Australia;

   C. **ROOT CAUSES OF CURRENT ISSUES -** Identifying the fundamental root causes of the current main issues adversely impacting the "value for money" aspect of construction costs in Australia;

   D. **POTENTIAL SOLUTIONS** - Suggesting potential solutions to address the fundamental root causes of the current issues adversely impacting the "value for money" aspect of construction costs in Australia; and

   E. CONCLUSION – Summation of potential ways forward to achieve better long-term VFM outcomes from Infrastructure works procured by Governments.

VALUE FOR MONEY

5. The author acknowledges and accepts the definition or concept of Value For Money (VFM) for governments is quite broad as indicated by the definition recently published by PWC:

   "Value for money has been defined as a utility derived from every purchase or every sum of money spent. Value for money is based not only on the minimum purchase price (economy) but also on the 4 E's (economy, efficiency, effectiveness, and equity) of the purchase.

   Value for money is used interchangeably with:

   - Optimal (Optimization)
   - Return on Investment (ROI)
   - Things sold at a good price
   - Where quality meets the price
   - Quality to price ratio
   - Win -win "

6. Consequently, in this submission the author focuses on the economy aspect because this is where most of the author's experience and expertise has been gained.

7. Value for money (VFM) is relevant at all stages of a project which include:

   a) Design Phase (up to 2 years duration)
   b) Procurement Phase (up to 6 months)
   c) Construction Phase (up to 5 years duration)
   d) Operation and maintenance Phase (up to 100 years duration)

8. The greatest opportunities for driving and achieving the best whole of life VFM outcomes is during the Design Phase (DP). It is rather ironic many design decisions made in the first 2 years of a project, later manifest themselves in the significantly longer (up to 100 years) operational and maintenance phase.

9. In governments at present, there appears to be an entrenched belief the lowest design fees equate to achieving VFM with respect to design rather than a whole of project life VFM perspective.

10. The current belief could not be furthest from the truth, as the quality of design and documentation significantly impacts the cost of both the Construction Phase (CP) and the Operation and Maintenance Phase.

11. The banning of minimum scales of professional fees in the late 1970's and early 1980's by the Trade Practices Commission (TPC), later superseded by the Australian Competition and Consumer Commission (ACCC) has been a major driver for a race to the

bottom for professional fees and eagerly accepted by governments for decades under the guise of obtaining VFM, albeit such VFM is in the context of a narrow simplistic short term benefit derived from a lowest fee competitive tendering process.

12. Sadly, this practice has worked against the prospects of achieving the best possible whole of life VFM outcomes.

13. These specific legislation changes and resulting government tendering practices of accepting the lowest design fees, have created many unintended but nonetheless significant consequences, including detrimental VFM outcomes.

14. Some of these adverse consequences are discussed later in the submission.

CURRENT ISSUES

Productivity Improvements - General

15. When it comes to productivity reviews in the construction sector, the white-collar component of the construction workforce has unfortunately been neglected in preference for the larger blue-collar component.

16. The Australian construction industry has now earned the somewhat unenviable reputation for some of the highest construction costs in the world by comparison with other developed countries.

17. White-collar productivity is certainly a sadly neglected sector of the industry that can deliver significant productivity improvements, simply through some fundamental changes.

18. Whilst the blue-collar workforce physically performs the construction works and are commonly referred to as productive workers, the white-collar workforce don't physically perform the construction works but instead perform managerial, supervisory and administrative work and are commonly referred to as non-productive workers.

19. Despite the common use group references to productive (blue-collar) and non-productive (white-collar) workers, both groups perform productive and non-productive work in relation to the different types of work they perform.

20. Notwithstanding this, it is evident from a productivity perspective that any white-collar work that can be reduced or avoided will lead to a white-collar productivity improvement which in turn leads to savings in project costs.

Productivity Improvements – Unamended Standard Forms of Contract

21. As a commercial practitioner (white-collar) in the construction industry, the author has worked with many different forms of contract.

22. It is this fundamental commercial aspect of construction - the form of contract, that I believe has enormous potential to eliminate significant non-productive white-collar workforce costs.

23. The author has spent a great deal of time, particularly early in the author's career, dealing with and treating the symptoms, rather than the root causes of construction cost problems.

24. Fast forward 40 years and the author now find himself regularly sifting through the various issues affecting a distressed project and often identifying a couple of root causes that have caused significant non-productive costs.

25. One of those root causes is the use of a heavily amended standard forms of contract which reallocate many risks (both known and unknown) from the Client to the Contractor.

26. The concept of a standard form of contract is not new and Standards Australia has produced several standard forms of contract (such as General Conditions of Contract - AS2124 - 1992) for some period.

27. If only these standard contracts were used as originally intended which was to facilitate:

    a) A balanced and reasonable allocation of risk, without the need for amending the standard (time & cost savings for the Client)

    b) Contractor's estimators being able to use the same prices for similar work in similar locations (based upon standard contract terms and conditions) without the need to read a heavily amended contract from cover to cover during the tender period and make educated guesses for changes in standard risk allocations. Noting many of these changes are unpriceable such as unknown ground conditions, circumstances, or events.

    c) No need for qualifying & negotiating unacceptable standard risk changes as proposed by the Client, thus saving time and cost for the contractor and the client.

    d) A reduction in disputes arising from interpretation and administration of amendments to standard contract clauses.

    e) An opportunity for use of standardised contract administration notices and templates and the avoidance of a learning curve associated with getting "up to speed" with the terms of heavily amended standard contracts.

28. In the author’s experience, the loudest opponents to such a logical change to using unamended standard forms of contract have been the profession with the most to lose - the legal profession.

29. The legal profession has a vested interest in maintaining the status quo because its members earn fees to amend contracts for the Client, advise contractors on unacceptable terms, provide advice to clients and contractors, and litigate / defend amended standard terms because there is a lack of clarity and certainty arising from the bespoke nature of the changes.

30. There has been and always will be a certain amount of litigation on standard contract terms, but over a relatively short period of time, such litigation has provided a great deal of clarity as to what most of the standard terms mean or do not mean and hence a substantial reduction in disputes.

31. The author is not saying there will be no disputes or litigation with unamended standard forms of contract, just a substantial reduction.

32. Some of the arguments put forward by the legal profession revolve around the need for parties operating in the business world to have the flexibility to formulate a commercial deal.

33. The commercial deal for a construction contract does not need to be complicated, provided the Client knows what it wants constructed and provides detailed documentation of its requirements, then a standard form of contract is very suitable.

34. This equally applies to design and construct contracts where the client provides a suitable detailed design brief. The corollary of this is if a client does not know what it wants to construct then perhaps the client should not be proceeding with its project.

35. Unamended standard forms of contract (protected by legislation) work for the real estate industry, the car sales industry, and the residential construction industry.

36. However according to the legal profession, unamended standard forms of contract are not acceptable for the commercial construction industry. As a practitioner in commercial construction for over 40 years it makes no sense whatsoever (to the author) from a cost perspective.

37. The author's opinions are based upon the vast amounts of non-productive (including legal) time spent as a direct consequence of amending standard forms of contract.

38. The use of standard (unamended) forms of contract for commercial construction will ultimately lead to more of every dollar spent on construction being paid to the blue-collar workers that lay the bricks and pour the concrete.

Productivity Improvements – Comprehensive Design and Documentation

39. Declining standards in the level of comprehensive and coordinated design and documentation have been occurring since the 1980's.

40. Comprehensive drawings and specifications have the potential to reduce the number of variations and contractual claims on projects but more importantly reduce the amount of disruption / delays and non-productive work for the Contractor.

41. Disruption and related delays to construction works because of uncoordinated design and poor documentation is the "Grim Reaper" for Contractors, subcontractors as well as Clients, because significant additional costs (quantified later in the paper) are incurred without providing any tangible result, (for example no additional product is produced).

    "Common sense says there should be ***more time and money spent in the pre-tender phase on providing comprehensive and coordinated drawings and specifications (fully documenting what the client actually wants constructed)*** *than amending Standard forms of contract".*

42. Industry self-regulation on the standards of project documentation has been an absolute failure and it is probably going to require Government and Industry Association leadership and legislation to get some fundamental change on this issue.

43. Consequently, it is imperative the construction industry needs to do what is best for itself and ultimately the consumers / public that purchase or use the facilities constructed by the industry.

ROOT CAUSES OF CURRENT ISSUES

Introduction

44. The Australian Construction Industry continues to experience several major problems feeding into the theme of expensive costs and sustainability.

45. The extent of each problem varies depending upon the role a party plays within the industry.

46. The Construction Industry is complex by nature and comprises several co-ordinated process streams which collectively involve literally millions of activities and decisions (moving parts).

47. It can be said, "The profession of construction is not an exact science", notwithstanding exact calculations are necessary for designs and setting out the works. This is because in constructing the physical works there are frequently several ways to achieve a particular outcome.

48. For these reasons it is firstly, difficult to identify and then secondly to solve the major problems of the Construction Industry, because of the haze (metaphorically speaking) created by the millions of moving parts to the construction process.

49. To have any prospect of a viable solution to a major problem, it is essential to always identify the root cause of the major problem.

What are the root causes of expensive construction costs in Australia?

50. It is widely acknowledged there are many problems currently being faced by the Australian Construction Industry, however the author focuses on the area of his expertise and the problem of expensive construction costs.

51. In the author's opinion, there are several possible contributors to why construction costs in Australia are expensive by world standards.

52. The author sets them out in the table below including some which are often put forward which are symptoms rather than root causes

53. In the author's opinion the possible root causes include:

Item	Problems	Root Cause	Symptom
1	Poor Regulation or Regulatory failures	*Ineffective government policies*	
2	Inept & unethical Corporate behaviour & poor practices	*Shareholder apathy*	
3	Declining numbers of suitably qualified and skilled tradespeople	*Ineffective government policies and training providers*	
4	Illegal Unionism	*Ineffective Industrial legislation and its enforcement*	
5	Inadequate and incomplete construction documentation (including specifications)	*Banning minimum scale of professional fees*	
6a	A legal profession hijack of the Industry in relation to contracting arrangements and risk allocations		*Symptom of Items 2 & 5*
6b	Long term financial sustainability		*Symptom of Items 2 & 5*

The number one problem and its root cause – the banning of minimum scales of professional fees

54. Many current problems and symptoms related to expensive construction industry costs can be traced back to one significant event that occurred in 1979.

55. This event was the banning of Scales of Minimum Professional Fees by the Trade Practices Commission in 1979.

56. These scales of professional fees subsequently became recommended or guideline scales of professional fees which were then ultimately banished altogether in any form by the Australian Competition and Consumers Commission (ACCC) in 1984.

57. In the author's view, these events have caused and continue to cause both unforeseen and detrimental changes to construction costs in Australia.

58. The change in legislation appears to have been designed in simplistic theory to reduce the cost of professional fees through competition.

59. This was achieved undoubtedly; however, it has been the significant additional costs these legislative changes have caused which have been effectively hidden by a smoke screen of complexity because of the huge number of moving parts to the industry along with the detrimental symptoms it has created.

60. In addition, the passage of time has (simply due to many people's ages) effectively severed the causal linkage to the root cause event.

61. Most of todays' industry participants (anyone under 60 years of age) have never experienced an industry with minimum scales of professional fees and the comprehensive and fully coordinated quality documentation that flowed from that situation.

62. The author recalls during the late 1970's it was common for most projects to be construct only and have only variations for client requested changes which rarely exceeded double digits by number.

63. Most projects had Bills of Quantities (BOQ) measured and paid for by the Clients. Any discrepancies in the documentation were usually corrected during the BOQ measurement process, which occurred prior to the BOQ being issued for the purpose of calling competitive tenders from contractors.

64. Consequently, during the construction phase, the number of contractor requests for information or clarification (RFI's) were miniscule by comparison to the typical number on a project today.

65. As an example, Stage 5 of the Brisbane Cultural Centre constructed for the Qld Government around 1998 had over 4,500 RFI's and approx. 1,700 variations and contractual claims.

66. In the late 1970's the amounts of abortive, disruptive, and non-productive works were minimal (primarily being those self-inflicted by contractors and subcontractors for which they were responsible), and it was a pleasure to work in the industry.

67. A stark contrast to today's commonplace "adversarial dog eats dog" fights from start to finish of the construction process. Is it any wonder the level of mental health in the construction industry has gradually deteriorated since the 1970's? However, whilst important, that is another issue for another day.

68. The Australian Federal & State Governments hold all the keys to solving the root cause behind expensive construction costs in the Australian Construction Industry – extremely poor design (from a whole of project life VFM perspective) and non-comprehensive and uncoordinated project documentation.

69. The reason why it is the biggest problem, in simple terms, over time it has ingrained itself so much within industry, acceptance of poor, uncoordinated and incomplete project documentation has become widely considered "business as usual".

70. This is fact, but that does not make it right nor does it mean it is contributing to the most efficient construction costs possible (The "optimal cost of construction").

71. Also, it is creating significant additional costs (including disruption, delay, and adverse productivity outcomes) and mental health consequences flowing directly and indirectly from poor, uncoordinated and incomplete project documentation. These additional costs are currently conservatively estimated at more than 10% of project costs.

72. **This would amount to monetary costs alone (putting aside the human costs) in the order of AUD$20B per annum based upon an estimated annual total construction spend of AUD$200B in 2020 in Australia.**

73. For most mega infrastructure projects with State and/or Federal Governments clients or sponsors, surely it is time to stop ignoring the biggest problem for which they (as a collective group) hold the keys to solving.

74. The answer is certainly not to push the design onto the contractor as they have been doing for quite some time, because that procurement process does little towards improving the prospects of avoiding the current circa $20B of cost wastage flowing directly from poor design and uncoordinated documentation, nor achieving the optimal construction cost for a project.

"Every project has an optimal construction cost for which it can be built."

75. The optimal construction cost "is what it is" irrespective of the client's budget, the Contractor's tendered bid or even the risk allocation. All parties need to understand that elementary fact.

76. Getting as close as possible to the optimal construction cost target must be the primary focus for all stakeholders. The appropriate procurement model must have the best prospects of delivering the project as close as possible to the optimal construction cost and by necessity generate comprehensive and co-ordinated construction documentation along with avoidance of unnecessary variations (caused by incomplete briefs and poor project documentation) and associated delays and disruption to many aspects of the project.

77. In recent times a lot of talk is occurring around risk allocations, particularly with respect to some of the largest projects, often referred to as mega-projects.

78. Risk allocation only determines who pays for what, so whilst important it should not be the primary focus particularly for clients. If the contractor achieves near the optimal construction cost, then the prospects of the client obtaining its project within its budget are certainly improved.

79. If contractors suffer delays, disruption, and loss of productivity because of deficient project documentation, their project cost will likely far exceed the project optimal cost and, irrespective of the form of contract, many will pursue their client for these costs.

80. Common sense suggests the parties would be best placed formulating a procurement process that facilitates the *avoidance of costs which need not be incurred*, delivered through sensible risk allocation and competent design and project management.

81. This philosophy, of avoiding costs which need not be incurred, should also be carried through into the construction phase, notwithstanding the existence of disputes, because it proactively operates to minimises the project outturn cost which ultimately benefits both the Client and the Contractor.

82. Relationship based forms of contracting certainly have the characteristics to achieve these types of outcomes. The Australian Contractor's Association's CEO Jon Davies recently published their

framework for achieving Sustainability in the Australian Construction Industry. Interestingly, Collaboration and Relationships Contracting features as one pillar of the ACA's framework.

83. Just to reinforce the size of the current cost impact of disruption costs to the procurement committee.

"Poor quality project documentation in Australia is potentially costing contractors, clients and / or consumers, collectively circa ***AUD$20B per annum****." This wastage must be stopped.*

84. The transition to design and construct has been driven by Clients to avoid the cost ramifications of poor design and documentation, by passing this risk onto the Contractors.

85. Whilst the risk has been transferred, the cost consequences of poor design and documentation have not been addressed and still manifest themselves in Australian construction costs.

86. The consequences or symptoms flowing from the banning of minimum scales of professional fees can be summarised in the following matrix, which also explains the progression away from a prevalence of construct only procurement to a current prevalence of design and construct procurement.

Ref	Root Cause	Primary Symptoms	Secondary Symptoms	Tertiary Symptoms
1	**Abolition of Minimum Scales of Professional Fees**	Professional Fees reduced	The standard of training professionals has reduced, and the number of constructions related professional cadetships collapsed	Clients move away from design responsibility and construct only procurement contracts
		Completeness of design documentation & co-ordination reduced	Significant increases in the level of variations arising from incomplete design documentation	1. Clients move to design and construct procurement contracts. 2. Significant increases in the amount of delay and disruption to the contractor's work. This is often difficult to record and problematic proving causal effect linkages because of the number of moving parts impacted. The ultimate outcome consistently erodes Contractor's margin which jeopardizes longer term sustainability of the construction industry.

POTENTIAL SOLUTIONS TO CURENT ROOT CAUSES

Potential solution 1 – Harmonisation of Construction and Licensing Legislation across all States and territories

87. The author understands this initiative may be already on the agenda of the Building Minister's Meeting (formerly known as the Building Minister's Forum).

88. There is a consumer protection requirement for compulsory licensing of all contractors and subcontractors with consistent legislation throughout Australia.

89. In general terms the legislation needs to address:

    a) Australia wide consistent legislation;
    b) Contractor licensing;
    c) Subcontractor licensing;
    d) Developer licensing (other than residential low rise)
    e) Security of Payment
    f) Retentions (maximum values and defined usage)
    g) Client guarantees (in exchange for Contractors providing credit)
    h) Australian Building Code status
    i) Local Regulations (defined or restricted to certain building components)

Potential solution 2 – Procuring design services based on whole of project costs versus the lowest design service price at the time of procurement of the design service

90. Whole of Life VFM must be fully considered at the procurement phase for Professional Design Fees. Appropriate weightings should be given to several non-price VFM outcome criteria possibly including:

    a) A cost to government assessment (including operation and maintenance costs for the whole of project) of which the design fee is a minor component.
    b) Assessment of demonstrable VFM whole of project life savings achieved by designers on previous projects.
    c) Other non-price criteria which can be validated and given a calculable value to the Government.
    d) Consider setting up a Government register of designers which tracks and records the VFM achievements of designers so that all designers are given a comparative rating. In the interests of fairness, all designers (and later entrants to the register) would commence on the same base rating. It would also be possible to track and record other design performance criteria such as environmental and safety which would be judged against a different set of values.

Potential solution 3 – Improving the quality of project design and documentation

91. There should be no argument from industry that the quality of project documentation is anything but poor and usually uncoordinated, leading to clients and industry participants bearing the circa $20B annual cost of disruptions and delays during the construction phase.

92. The driving philosophy for change is: "*it is always easier and cheaper to get documentation and co-ordination correct on the drawing board than in the field*".

93. This issue is best addressed with the co-operation of all the relevant professional institutes and bodies including:

    a) The Australian Institute of Architects;
    b) Engineers Australia;
    c) The Australian Institute of Building;
    d) The Australian Institute of Quantity Surveyors;
    e) The Australian Institute of Building Surveyors

94. The solution must address:

    a) A detailed technical standard for project documentation for each discipline and a range of project types and value ranges, which defines:
        i. A minimum standard defined for the level of outputs or deliverables and the quality of those documents including co-ordination. The aim of the standard should be to produce comprehensive and fully co-ordinated documents which can be built as documented;
        ii. A minimum standard defined for required inputs to the design process such as comprehensive Geotechnical investigations;
        iii. Minimum time periods for design and
        iv. Minimum time periods for documentation and document co-ordination

    b) A Minimum scale of fees which is appropriate for the providing all the services defined by the relevant detailed technical standards.

    c) Legislation which prohibits
        i. Clients providing less than the detailed technical minimum standard for inputs; and
        ii. Professionals providing less than the detailed technical minimum standards for outputs and deliverables;
        iii. Professionals providing a service less than the detailed technical minimum standards for outputs and deliverables
        iv. Professionals charging less than the relevant minimum scale of professional fees for the relevant detailed technical minimum standards for outputs and deliverables.

CONCLUSIONS

95. Unfortunately, there is no one silver bullet solution and governments should be opened to implementing several solutions.

96. Australian Governments at Federal and State level must work collaboratively to realise several solutions and make legislative changes which would positively improve the whole of project life VFM outcomes delivered by the Australian Construction Industry for both government and the public.

97. The solutions should include:

    a) **Cut Red Tape** - Harmonisation of Construction and Licensing Legislation across all States and territories;
    b) **Focus on Value for Money** - Implement "Whole of Life cost benefit analysis" into the procurement of all design and construction procurements;
    c) **Improve Design and Documentation Deliverables** - Addressing the poor standard of design and documentation deliverables will substantially reduce the estimated circa **$20B annual wastage** on disruption and delay costs for which no product is produced.

98. Successful implementation of these three (3) solutions would allow governments to deliver more construction bang for their buck but also importantly reduce a substantial amount of hidden and unnecessary mental distress that currently exists in the Australian construction industry.