

Protecting Design-Build Owners Through Design Liability Coverage, Independent Construction Managers, and Quality Control Procedures

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The domestic economic downturn of the late 1990s led to budget cuts and downsizing efforts that restricted the ability of state transportation agencies (“STAs”) to provide much-needed highway infrastructure improvements. STAs were forced to improve the cost-efficiency of their highway construction programs in order to accomplish their goals.¹ They sought to exploit the state-of-the-art construction knowledge and technology held by specialty contractors in order to run more efficient programs.² They looked for ways to avoid the pre-construction costs, delays and litigation commonly associated with the traditional design-bid-build construction method.³ Additionally, STAs searched for a building method with greater cost certainty and the potential for larger time-savings. Of the many alternative procurement techniques available, one of the most promising that STAs began to explore is “design-build,” a project delivery system in which a project owner contracts directly with a single entity

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1. FEDERAL HIGHWAY ADMINISTRATION, U.S. DEPARTMENT OF TRANSPORTATION, REPORT TO CONGRESS ON EFFECTIVENESS OF DESIGN-BUILD AS REQUIRED BY TEA-21 SECTION 1307(F) (2004), available at <http://construction.colorado.edu/design-build/desktop.aspx> [hereinafter *FHWA Design-Build*].

2. JUSTIN SWEET & MARK SCHINEIER, LEGAL ASPECTS OF ARCHITECTURE, ENGINEERING AND THE CONSTRUCTION PROCESS § 17.04, at 352 (7th ed. 2004).

3. *Id.*

that assumes complete responsibility for both project design and construction.⁴ This paper explains the design-build system and some of the inherent advantages that make it an attractive option to project owners, especially STAs. A central issue of the design-build method, namely that the design professional's allegiance is modified from the owner to the contractor, is discussed, along with several concerns associated with this relationship shift. Specifically, potential design-build project owners may be concerned of design insurance coverage gaps, project quality, and unfair change orders due to an inability to effectively monitor contractor performance. Three ways in which potential design-build owners can guard against these problems are then highlighted. By selecting an appropriate design liability coverage option, securing an independent construction manager, and establishing quality control programs, project owners can fully enjoy the many benefits of the design-build procurement model while effectively responding to the design professional's redefined commitment.

I. ADVANTAGES OF THE DESIGN-BUILD MODEL

Design-build is a method of construction whereby a project owner, having defined its initial expectations to a certain extent, executes a single contract for both the architectural/engineering design services and construction of a project.⁵ In contrast, design-bid-build, the traditional project delivery method, requires separate procurement processes for the distinct and sequential phases of design and construction.⁶ The design-builder may be a single company with in-house design and construction departments, a consortium, or a partnership of separate companies called a "joint venture."⁷ Contractors most often lead design-build projects because of the large capital required for the integrated design-build approach.⁸ Design services are then rendered either by in-house design professionals or by an independent design professional firm acting as a sub-consultant to the contractor.⁹ Whether the leading entity is a general contractor or an engineer/architect, the fundamental feature of design-build delivery remains that a single entity assumes responsibility for both project design and construction.¹⁰

4. SIAC CONSULTING, ABOUT THIS RESEARCH, at <http://construction.colorado.edu/design-build/desktop.aspx> (last visited May 25, 2005).

5. Mark C. Friedlander, *Designer-Led Design-Build: Why it Works for Contractors*, 20 CONSTRUCTION LAW 29, 29 (2000).

6. SIAC CONSULTING, *supra* note 4.

7. Friedlander, *supra* note 5, at 29.

8. SWEET & SCHINEIER, *supra* note 2, § 17.04, at 353.

9. Paul B. Bech, *Professional Licensing and Design-Build Contracting*, 70 PA. B. ASS'N Q. 35, 35 n.1 (1999).

10. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS

Design-build is one of the fastest growing methods of project delivery in the country today, growing by more than 100 percent a year in a wide range of construction projects.¹¹ Design-build is a popular procurement technique for several reasons.

First, design-build enables owners to more fully exploit the state-of-the-art construction knowledge and technology held exclusively by specialty contractors, leading to more efficient projects.¹² The design-build method allows the contractor to make valuable contributions at the design stage, whereas the traditional design-bid-build method relies heavily on the expertise of the design professional and is far less disposed to incorporation of contractor innovations. Second, design-build has the potential to lower costs by avoiding pre-construction costs and delays associated with the multiple procurement phases of design-bid-build.¹³ Third, because design-build is generally bid on a lump-sum basis, it provides owners with greater cost certainty.¹⁴ Fourth, design-build delivery provides owners with a single-point of responsibility for project development. Single-point responsibility can eliminate the need for the owner to coordinate or mediate disagreements between separate design and construction entities, reducing the owner's administrative burdens.¹⁵ Finally, the design-build system has the potential for significant time savings because contractors have early access to design information, allowing all phases of the project—planning, design, and construction—to occur simultaneously.¹⁶

In the early 1990s, based on the success of design-build techniques in the private sector, the Federal Highway Administration Agency (“FHWA”) encouraged state transportation agencies that administer federal-aid highway projects to use the design-build method on a limited basis in order to test the technique's usefulness.¹⁷ In 1997, the Transportation Equity Act for the Twenty-First Century (“TEA-21”),

(“AASHTO”) JOINT TASK FORCE ON DESIGN-BUILD, CURRENT DESIGN-BUILD PRACTICES FOR TRANSPORTATION PROJECTS, para. 1.2 (2003) [hereinafter AASHTO JOINT TASK FORCE ON DESIGN-BUILD], at http://designbuild.transportation.org/db_report.html.

11. Friedlander, *supra* note 5, at 29. In large civil projects specifically, the growth rate is between 80 and 150 percent a year, depending on the category of construction. *Id.*

12. SWEET & SCHINEIER, *supra* note 2, § 17.04, at 352.

13. *Id.*

14. Paul B. Rosta, *Total 2003 Revenue Exceeds \$53 Billion*, DESIGN BUILD, July 2004, available at http://www.designbuildmag.com/features/archive/2004/0407_feature4.asp.

15. AASHTO JOINT TASK FORCE ON DESIGN-BUILD, *supra* note 10, at para. 1.2.

16. Jay A. Felli, *Comments: The Elements of Ohio's Liability Provisions for Contemporary Design-Build Architects an Unwillingness to Expand the Plan*, 17 DAYTON L. REV. 109, 149 n.63 (1991). In contrast, in the traditional design-bid-build model, construction cannot begin until the design phase is completed, which itself cannot begin until the programming phase has been completed, and so on; time and cost problems are thus serious drawbacks. *Id.* at 149 n.62.

17. SIAC CONSULTING, *supra* note 4.

which became the new funding legislation for the nation's surface transportation programs, included provisions requiring that a comprehensive national study be conducted to evaluate the effectiveness of design-build contracting in the federal-aid highway program.¹⁸ And in 2002, the Intermodal Surface Transportation Efficiency Act ("ISTEA") implemented FHWA regulations allowing design-build contracting, listing the criteria and procedures by which FHWA will approve the use of design-build contracting by state transportation agencies ("STAs").¹⁹

As STAs are increasingly interested in the use of design-build procurement, it has become a hot topic in state legislatures across the country. As of 2002, thirty-one states had passed design-build legislation of some kind, with by far the largest group of design-build bills introduced relating to highway and road construction.²⁰ Outside of the realm of public transportation projects, design-build is now easily the fastest growing method of project delivery in the country, with over \$53 billion in total revenue in 2003.²¹ Overall, design-build projects are growing by more than 100 percent a year.²² In large civil projects specifically, the growth rate is between 80 and 150 percent a year, depending on the category of construction.²³

A recent successful example of a design-build public transportation project is Colorado's Transportation Reconstruction and Expansion Project, or T-REX. Started in 2001, T-REX is a seven-year, \$1.67 billion design-build project that includes complete reconstruction of seventeen miles of interstate and the construction of nineteen miles of new light rail transit.²⁴ T-REX is an unprecedented multi-modal project featuring the collaborative efforts of the Colorado Department of Transportation ("CDOT"), the Regional Transportation District ("RTD"), FHWA, and the Federal Transit Administration ("FTA"), to combine light rail, highway and other transit options in one massive construction effort.²⁵ The agencies involved felt that an innovative construction approach would be re-

18. *Id.* The ultimate report, prepared by Science Application International Corporation (SAIC) and AECOM Consult, Inc., and based on literature review, interviews, surveys and the results of FHWA studies, is currently under review. *Id.*

19. Federal Highway Administration Design-Build Contracting, 67 Fed. Reg. 75,902 (Dec. 10, 2002), available at <http://a257.g.akamaitech.net/7/257/2422/14mar20010800/edocket.access.gpo.gov/2002/02-30428.htm>.

20. Memorandum from G. William Quatman, Shughart Thomson & Kilroy, P.C., State Design-Build Legislation Update (2002), available at http://www.stklaw.com/_FileLibrary/Article/27/Pending%-20Bills.pdf.

21. Rosta, *supra* note 14.

22. Friedlander, *supra* note 5, at 29.

23. *Id.*

24. T-REX, *Introduction to T-REX*, at http://www.trexproject.com/trex_channels/about/introduction.asp (last visited May 24, 2005).

25. *Id.*

quired for this ambitious undertaking. They focused on the design-build method.²⁶

T-REX is not C-DOT's first experience with the design-build approach. C-DOT contracted for several smaller design-build projects on interstate rehabilitation projects in the late 1990's.²⁷ C-DOT then obtained authorization to use a best value procurement process for design-build contracts in 1999, a specialized form of procurement based on the highest overall quality, of which low price is merely one of several important factors considered.²⁸ The best value procurement process allowed C-DOT to select a design-build team that would most effectively meet its stated goals of minimizing inconvenience to the public, staying under budget, designing and constructing a quality project, and completing the project before June of 2008.²⁹ The winning proposal was submitted by the Southeast Corridor Constructors ("SECC"), a joint venture design-build team led by Kiewit Construction and Parsons Engineering.³⁰

The Colorado Department of Transportation ("C-DOT") notes that the design-build method gave SECC considerable flexibility and creativity, enabling project construction to begin while completing design.³¹ This was necessary for SECC to meet the project's aggressive schedule while minimizing inconvenience to the public.³² Also, the design-build method saved the state both time and money.³³ C-DOT compared the current seven year completion goal to the twenty or more years that the project would have taken using the traditional design-bid-build system, noting that an additional thirteen years of construction time would have entailed an enormously higher cost.³⁴ In addition, the contractual completion deadline is now almost two years ahead of schedule, reducing the construction duration from seven to five years, an incredible accomplishment for a project of significant magnitude and complexity.³⁵ Lower project costs are also anticipated in a number of areas including inflation, administrative costs, and user costs.³⁶ Based on the success of the T-REX transportation project, as well as other positive experiences, the Colorado

26. *Id.*

27. "Smaller" projects are those that cost less than \$50 million. AASHTO JOINT TASK FORCE ON DESIGN-BUILD, *supra* note 10, at para. 2.1.

28. *Id.*

29. T-REX, *supra* note 24.

30. Steve Moler, *Colossal Partnership: Denver's \$1.67 Billion T-REX Project*, PUB. ROADS. (Sept./Oct. 2001), available at <http://www.tfhrcc.gov/pubrds/septoct01/trex.htm>.

31. T-REX, *supra* note 24.

32. *Id.*

33. *Id.*

34. *Id.*

35. *Id.*

36. AASHTO JOINT TASK FORCE ON DESIGN-BUILD, *supra* note 10, at para. 2.1.

Department of Transportation anticipates using design-build in the future.³⁷

II. THE ALTERED ROLE OF THE DESIGN PROFESSIONAL IN THE DESIGN-BUILD SYSTEM

Despite the many advantages of the design-build system over the traditional approach, the union of the design professional and contractor into a single entity may cause potential owners some apprehension. Owners may be concerned that they are losing any advantages they may have had through separate relationships with the two primary construction parties. Specifically, owners may fear the ramifications of the fact that the role of the design professional is changed from that of the owner's consultant to that of the contractor's "teammate."³⁸

In a traditional relationship, the design professional who contracts directly with the owner is the owner's representative during construction.³⁹ The design professional has an ethical and contractual duty to report to the owner any contractor work that does not comply with the plans and specifications for a project.⁴⁰ The design professional becomes the 'eyes and ears' of the owner, policing the construction project and protecting the interests of the owner by evaluating and criticizing the performance of the general contractor.⁴¹ Thus, owners benefit from the services of an independent and knowledgeable party to monitor construction and ensure full conformance with the contract specifications. As the Georgia Supreme Court concisely stated in *Wise v. State Board for Examination, Qualifications & Registration of Architects*:⁴²

[Traditionally] [t]he job of [a design professional] is to ensure that his plans are followed precisely, irrespective of the additional cost to the contractor. In many respects, the [design professional] is seen as an antagonist to the contractor, as the contractor is seeking the maximum profit, while the [design professional] is seeking the best final product possible.⁴³

However, this traditional "watchdog" role of design professionals is greatly restricted in the design-build model.⁴⁴ Design professionals in design-build projects are typically subcontractors and are therefore prima-

37. *Id.*

38. Charlotte R. Robinson, *Design-Build Contracts for Colorado Highway Construction: New Contractual Issues-Part II*, 29 COLO. LAW. 53, 53 (2000).

39. *Id.*

40. *Id.*

41. Bech, *supra* note 9, at 44.

42. *Wise v. State Bd. for Qualifications & Registration of Architects*, 274 S.E.2d 544 (Ga. 1981).

43. *Id.*

44. Bech, *supra* note 9, at 44.

rily responsible to the design-builder, not the owner.⁴⁵ They are placed in the professionally-difficult position of attempting to satisfy both their contractual allegiance with the design-builder and their traditional role of representing the owner.⁴⁶ Because design professionals have a stake in the financial results of the project, the owner's desires, such as high quality and conformance with project specifications, may not take priority over the considerations of the contractor, such as lowering total cost and improving constructability.⁴⁷ Contrary to the expectations of the owner, it may prove very difficult for the design professional to exercise any independent control at all over the actual construction of a design-build project.⁴⁸

III. THREE SPECIFIC OWNER CONCERNS OF DESIGN-BUILD PROCUREMENT

The altered role of the design professional in design-build projects raises several important concerns for potential owners. A primary issue, created by the lack of a direct contractual relationship between the owner and the design professional, is how best to adequately guard against the significant difference in design insurance coverage between the traditional and the design-build systems. A second concern is how design-build owners can ensure high quality and the production of a satisfactory final product without the services of an independent design professional. A third issue, closely related to quality concerns, is how design-build owners, if not represented on-site by the design-professional, can monitor the contractor's performance to guard against unfair change orders.

A. DESIGN INSURANCE COVERAGE GAPS

Design insurance coverage in design-build is significantly different than in the traditional system because owners no longer have a direct contractual relationship with the design professional. In design-bid-build construction, the contractor and the design professional have different

45. SWEET & SCHINEIER, *supra* note 2, § 17.04, at 354. The vague and undefined belief that a registered architect or engineer will take the interests of the owner and the public into account, even though engaged and paid by the builder, is demonstrated by successful owner claims against design professionals with whom they had no contract. *See id.*

46. L. G. Byrd, *Prerequisites for a Successful Design/Build/Warranty Highway Construction Contract: A Report to the U.S. Department of Transportation FHWA* (1993), at <http://www.fhwa.dot.gov/program-admin/contracts/byrd.htm> [hereinafter *Prerequisites*].

47. Robinson, *supra* note 38, at 53.

48. Bech, *supra* note 9, at 44. Despite indirectly receiving payment from the owner, design professionals in the design-build method are primarily responsible to the design-builder, over and above their duties to the owner and obligations to protect the public. *See also* SWEET & SCHINEIER, *supra* note 2, § 17.04, at 354.

liabilities that are covered under separate insurance policies.⁴⁹ The contractor's performance is covered under performance bonds, which do not underwrite the design of the project.⁵⁰ A construction contractor's general liability policy will also exclude coverage for the services of design professionals.⁵¹ Conversely, design professionals are covered by errors and omissions insurance policies that do not include coverage for construction services.⁵²

However, the redefined relationships of the design-build model modifies each party's traditional rights and liabilities.⁵³ Specifically, in the common situation where a contractor leads a design-build team, the contractor is explicitly responsible for the design of a project.⁵⁴ However, the contractor's liability insurance policy generally will not provide coverage for redesign and reconstruction required by negligent design.⁵⁵ Further, the professional liability policy of the project's design firm would not provide any coverage if the owner had an additional claim based on the contractor's own negligent acts, errors or omissions in relation to the design component.⁵⁶

Without supplemental design insurance coverage, the owner would then be left with two options to secure compensation for damages based on design errors. First, the owner could sue the contractor for breach of contract, relying on the design-builder's financial capacity to pay for remedial design and construction.⁵⁷ Second, the owner could sue the surety and attempt to force coverage of design error under the construction performance bond.⁵⁸ While it is possible that a design-build owner may prevail on such a claim, it is not in the owner's best interests to rely on litigation for protection against design errors. Such an approach could have a negative effect on the attitude with which contractors respond to the design-build model, eroding the spirit of mutually beneficial cooperation upon which the model is based. It is therefore important that design-build owners specifically address the issue of design risk to ensure that comprehensive coverage is obtained.

49. Robinson, *supra* note 38, at 55.

50. *Id.*

51. *Id.*

52. *Id.*

53. *Id.* at 54.

54. Terry R. Tennant, *Advanced Project Delivery Systems: Design-Build and Design Delegation Insurance Issues*, Address Before the ABA Forum on the Construction Industry and Section of Public Contract Law (Oct. 16-17, 1998), at http://www.c-risk.com/Articles/trt_design-build_pds_01.htm.

55. *Id.*

56. *Id.*

57. *Id.*

58. *Id.*

B. PROJECT QUALITY

Another concern that potential design-build owners may have is how best to ensure high project quality. Many owners are accustomed to performing their own quality control processes in design-bid-build projects to make certain that the final product meets or exceeds expectations. This may be particularly true of owners who typically pursue large and complex developments, such as state transportation agencies (“STAs”) that build and modernize transportation infrastructure systems. While STAs must select the most efficient alternative available that adequately addresses a specified need, they must also protect public health and safety by ensuring design integrity.⁵⁹ STAs are thus accustomed to performing their own quality control measures at both the design and construction stages.⁶⁰

However, the design-build system’s single-point responsibility requires that owners release a significant level of control to the design-builder, who is solely responsible for both design and construction.⁶¹ In fact, to most fully realize the benefits of single-point responsibility, owners should merely provide the design-builder with detailed performance specifications and otherwise leave the design and construction entirely up to the design-builder.⁶²

Moreover, the design-build system restricts owners from implementing their own quality control measures in both the design and construction phases. In the design phase, potential design-build owners should be aware that increased control over project design might not only reduce potential design-build benefits but might also carry with it the risk of liability for the entire project.⁶³ Furthermore, a design-build owner’s active involvement in the design process may even constitute interference with the proper rendition of design services.⁶⁴ In the construction phase, it is simply not practical for owners, even relatively sophisticated and experienced state transportation agencies, to perform their own quality control

59. Thomas J. Stipanowich, *Reconstructing Construction Law: Reality and Reform in a Transactional System*, 1998 WIS. L. REV. 463, 512 (1998).

60. AASHTO JOINT TASK FORCE ON DESIGN-BUILD, *supra* note 10, at para. 6.3.

61. Christopher C. Whitney, *An Evolving Perspective on Design/Build Construction: A View From the Courthouse*, 15 CONSTRUCTION LAW. 1, 94 (1995).

62. *Id.* at 95.

63. AASHTO JOINT TASK FORCE ON DESIGN-BUILD, *supra* note 10, at para. 6.3. Owners that involve themselves in the design process to a significant degree, placing considerable constraints on the design-builder, could be held liable for the entire project design. *Id.* For instance, an owner may be liable for project design when providing a relatively high level of design, allowing a limited time to proposers to review that design, and retaining a high degree of control over the post-award design. *See also id.*

64. Whitney, *supra* note 61, at 94 (citing *Armour & Co. v. Scott*, 360 F. Supp. 319 (W.D. Pa. 1972)).

measures. The design-builder has complete control over the project site, construction scheduling and method of construction. Also, owners should consider that one of the advantages of design-build is that construction and design can often be performed simultaneously. Thus, one project area could be constructed before the design of another is even completed. Therefore, project owners will most likely have difficulty following the design-builder's schedule in order to effectively implement quality control measures as they would in traditional design-bid-build projects. The construction in such traditional projects is much more predictable because it can only occur after the design has been completed and reviewed. Additionally, owners in traditional projects have the luxury of reviewing and modifying the project design before choosing a contractor. This allows the owner to gain familiarity with the design and plan quality control measures. The design-build method does not afford the owner such luxury.

Therefore, along with losing the design-professional watchdog, owners may also fear the fact that the design-build method forces a shift from ensuring quality for themselves to assigning responsibility for the production of a quality product to the design-builder.⁶⁵ The issue of how to effectively ensure quality of both design and construction in a design-build project therefore may be very important to potential design-build owners.

C. UNFAIR CHANGE ORDERS AND MONITORING CONTRACTOR PERFORMANCE

Finally, along with ensuring quality, design-build owners may also be concerned with how to monitor design-build contractor performance in order to verify the validity of change order requests. Change orders are of special concern to design-build owners because the point at which the scope of work is increased, meriting compensation, is more difficult to define than in traditional design-bid-build projects. Generally, change orders are required where the owner makes an additional request in quality or quantity that affects the project price.⁶⁶ In the traditional model, any additional work that must be performed outside of the design plans, but not due to the contractor's own negligence, is an additional request, or "change in scope," for which the contractor may make a claim.⁶⁷ This distinction between performance under the contract and work that constitutes a change in scope is relatively clear because the owner alone is responsible for the design.⁶⁸

65. AASHTO JOINT TASK FORCE ON DESIGN-BUILD, *supra* note 10, at para. 6.3.

66. *Change Orders in Design-Build Projects*, CONSTRUCTION INDUSTRY ADVISOR (2001), at <http://www.tgcepa.com/ciaspring01.html#Change> [hereinafter *Change Orders*].

67. *Id.*

68. *Id.*

However, the question of what constitutes a change in scope in a design-build project is not as clear. While the design-build owner provides a basic configuration concept to define its expectations, the design-build team's design professional, not the owner, produces design plans.⁶⁹ Hence, change orders based on design errors and omissions are eliminated because the owner does not act as an intermediary to warrant the accuracy of the drawings.⁷⁰ Nevertheless, a contractor could potentially claim additional compensation for a large volume of work by charging that deficiencies in the owner's basic configuration expanded the scope of work. While there certainly may be occasions where such a claim would be valid, the concern for design-build owners is how to verify that the additional work was not actually caused by an element for which the design-builder was responsible, such as the project design. Thus, without the supervision provided by a watchdog design professional, STAs may feel vulnerable to unfair change orders.⁷¹

IV. ADDRESSING OWNER CONCERNS OF DESIGN RISK COVERAGE, PROJECT QUALITY AND UNFAIR CHANGE ORDERS IN THE DESIGN-BUILD MODEL THROUGH DESIGN LIABILITY COVERAGE OPTIONS, INDEPENDENT CONSTRUCTION MANAGERS AND QUALITY CONTROL PROGRAMS

Three topics should be discussed when addressing the specific concerns, discussed above, that owners may have regarding the design-build model. First, there are several options available to design-build owners through which comprehensive design insurance coverage can be ensured. These include minimum errors and omissions ("E&O") insurance specifications, standalone professional liability policies for contractors, and owner controlled insurance programs ("OCIPs"). Second, retaining the services of an independent construction manager is an important step towards monitoring the quality of performance and guarding against unfair change orders. Finally, incorporating specific quality control procedures in design-build contracts is an essential tool to ensuring that the owner's quality expectations are met while also assisting the owner in monitoring contractor performance. When owners incorporate all three of these areas in their approach to design-build projects, they can be more certain of attaining the full range of benefits that the design-build model can offer

69. Design-build owners provide this basic configuration concept in the bid package both to communicate their expectations and for the purpose of constraining the design-builder's ability to deviate from a particular design concept. See AASHTO JOINT TASK FORCE ON DESIGN-BUILD, *supra* note 10, at para. 5.1.

70. *Change Orders*, *supra* note 66.

71. SWEET & SCHINEIER, *supra* note 2, § 17.04, at 356.

while avoiding the harms of a design insurance gap, an inadequate final product or unacceptable contractor performance.

A. THREE APPROACHES TO PROVIDING DESIGN RISK COVERAGE FOR DESIGN-BUILD OWNERS

As discussed, an important issue that potential design-build owners should address is the need to secure comprehensive design insurance coverage in the design-build method. Design insurance is an important issue because the convolution of design and construction responsibilities creates new liabilities that may not be adequately addressed under the traditional insurance arrangement.⁷² There are several options available to design-build owners seeking to address this issue, including minimum errors and omissions (“E&O”) insurance specifications, contractor controlled professional liability policies, and owner controlled insurance programs (“OCIPs”).

The promulgation of appropriate minimum standards in E&O insurance coverage for design build projects is one approach to addressing the issue of design risk. By demanding minimum standards in the design professional’s E&O insurance, owners can protect themselves from design negligence, errors, and omissions while also securing their traditional surety guarantees under the contractor’s performance bond.⁷³ Owners can also obtain long-term protection through stipulating appropriate insurance minimums.⁷⁴ For instance, owners can require that design professionals obtain prepaid coverage tails to assure coverage for long-term exposure.⁷⁵ Conversely, owners could specify retroactive coverage extending back to the beginning of pre-bid design activities.⁷⁶ Additionally, owners could protect themselves against low liability limits through requesting excess E&O coverage. In general, because there are no standard errors and omissions insurance policies, design-build owners can examine each policy’s exclusions, definitions, limits and conditions and make revisions as required to adequately address the additional exposures assumed by the design-builder for each project.⁷⁷

Owners should consider both the advantages and disadvantages of this approach. A suggested advantage to pursuing coverage under the design professional’s E&O policy, instead of, for example, forcing coverage through the contractor’s surety, is that irresponsible risk management

72. Mark V. Niemeyer, *Managing Risk on Design-Build Projects: The Surety’s Perspective*, ROUGH NOTES, Mar. 1998, at <http://www.roughnotes.com/rnmagazine/3cdindex98.htm>.

73. Robinson, *supra* note 38, at 54.

74. Niemeyer, *supra* note 72.

75. *Id.*

76. *Id.*

77. *Id.*

among design-builders will be discouraged, developing a more qualified and responsible contracting group with greater support from their sureties.⁷⁸ A disadvantage to this option is that stipulating minimum errors and omissions specifications may not completely cover the owner for claims against the contractor for negligent supervision of the design component of the project.⁷⁹ The policy will usually only provide coverage to the design members of the design-build team and thus exclude the contractor.⁸⁰

A second approach to securing comprehensive coverage in design-build projects is for owners to require that the contractor obtain a standalone professional liability policy to cover the project's design exposure.⁸¹ If the contractor provides its own design professional liability policy, the owner is assured of an insurance policy that will respond on the contractor's behalf if the owner has the need to pursue a claim for a design error or negligent supervision of the design component.⁸² This approach reinforces the benefits of the design-build model's single point of responsibility because it simplifies the owner's insurance claims process.⁸³ The contractor's design professional policy can resolve any design-related claim by the owner, leaving the contractor to pursue apportionment of liability among the design-build team members.⁸⁴ And the market for such professional liability insurance has grown in recent years along with the popularity of design-build procurement, with insurance companies offering contractors annual policies to provide coverage for the vicarious liability of a project's design component.⁸⁵ However, potential design-build owners should expect an increase in bid prices under this approach. In traditional construction, there is no need for a contractor to secure such an additional liability policy that is separate from the design professional's insurance. And this additional contractor cost would be passed directly to the owner.⁸⁶

A third viable option that design-build owners can pursue to properly address design risk coverage is an owner controlled insurance programs ("OCIP").⁸⁷ OCIPs are a type of "wrap-up" insurance procurement that allows the owner to establish and administer coverage for all project participants by "wrapping up," or bundling, multiple par-

78. *Id.*

79. Tennant, *supra* note 54.

80. *Id.*

81. *Id.*

82. *Id.*

83. Tennant, *supra* note 54.

84. *Id.*

85. *Id.*

86. *Id.*

87. Robinson, *supra* note 38, at 56.

ties into a single consolidated program.⁸⁸ OCIPs are typically employed on large, multi-disciplinary construction projects involving numerous parties.⁸⁹ Also, the integrated risk management and financing that such programs require make them a popular approach among owners seeking to augment the benefits of the design-build method.⁹⁰ Owner controlled insurance programs may thus be particularly appealing to state transportation agencies considering design-build procurement for large transportation infrastructure projects.

A primary aspect of an OCIP is, as the name implies, increased owner control.⁹¹ Under owner controlled insurance programs, an owner takes total responsibility for insurance coverage and so has direct control over the selection of an insurer, allowing the owner to monitor the insurer's performance and insolvency.⁹² This leads to several significant advantages. First, by combining the cost for all of the contractors' and subcontractors' insurance coverage into a single policy, an owner creates substantial leverage in the insurance market.⁹³ An owner can capitalize on this leverage to realize volume discounts from the economies of scale, buying broader coverage at lower rates than available to individual contractors.⁹⁴ "An owner can realize cost savings of as much as 10-15% due to the volume purchasing of the OCIP coverages."⁹⁵ The owner then can require the project participants to reduce their bid offers by eliminating all of their insurance costs in exchange for owner-provided coverage.⁹⁶ Compared to traditional, fragmented insurance programs, this could potentially reduce an owner's overall project costs by up to two percent.⁹⁷

Second, an owner controlled insurance program allows the owner to define the scope of coverage. Owners using OCIPs have the ability to obtain broader insurance coverage with higher dedicated limits. Specific to the issue of design risk coverage in design-build projects, owners administering OCIPs can include a professional liability insurance policy that will provide coverage for all of the design professionals on the pro-

88. David L. Grenier, *Owner Controlled Insurance Programs - Part One*, CFMA BUILDING PROFITS (Sept./Oct. 2000) [hereinafter Grenier, *Part One*], at http://www.c-risk.com/Articles/dlg_OCIP_01.htm (last visited May 23, 2005).

89. *Id.*

90. David L. Grenier, *Owner Controlled Insurance Programs - Part Two*, CFMA BUILDING PROFITS (Jan./Feb. 2001)

91. Grenier, *Part One*, *supra* note 88.

92. *Id.*

93. *Id.*

94. *Id.*

95. *Id.*

96. Bradford A. Nilsson, *Owner Controlled Insurance Programs (OCIPs): Why Owners Like Them and Why Contractors May Not*, at http://www.constructionweblinks.com/Resources/Industry_Repo-rt-Newsletters/July_14_2003/ocip.htm (July 14, 2003).

97. *Id.*

ject, even without a direct contract with the design professionals.⁹⁸ Such an approach will provide comprehensive protection for the owner regardless of the coverage that the individual professionals may or may not have. Additionally, “an owner can purchase broader and more uniform coverage for the OCIP than each design professional could purchase individually in a stand-alone policy.”⁹⁹ By directly establishing and administering owner controlled insurance programs, a design-build owner eliminates the apprehension that the specific endorsements and limitations of the particular policies of the parties involved will result in an insurance gap.¹⁰⁰ The owner is assuring itself uniform and comprehensive design insurance coverage and can then more fully take advantage of the potential benefits that the design-build method has to offer.

Whether through ensuring adequate minimum standards in professional errors and omissions insurance policies, requiring the contractor to purchase a design professional liability policy or establishing a broad owner controlled insurance program, design-build owners should invest the time and planning necessary to address the issue of design insurance for design-build projects. With sufficient insurance coverage for project design secured, owners can move on to the important issues of obtaining the services of an independent construction manager and establishing a quality control program.

B. INDEPENDENT CONSTRUCTION MANAGERS AS THE OWNER'S REPRESENTATIVE IN DESIGN-BUILD PROJECTS

Potential design-build owners who are concerned about how to monitor contractor performance and also ensure project quality should consider the services of an independent construction manager. While not a panacea, hiring a separate design professional to take the role of construction manager can greatly assist the owner by evaluating project design, overseeing construction, and communicating important project developments.¹⁰¹

Construction managers are specialized professionals, unconnected with design creation, that perform many services typically expected of the design professional.¹⁰² A construction manager should provide construction experience and skill at all phases of the construction process.¹⁰³ Cost estimating and budgetary controls, scheduling, organizational management, quality assurance, and a commitment to meeting the expectations

98. Grenier, *Part One*, *supra* note 88.

99. *Id.*

100. Nilsson, *supra* note 96.

101. Robinson, *supra* note 38, at 54.

102. See SWEET & SCHINEIER, *supra* note 2, § 12.08, at 201.

103. *Id.*

of the owner are various components of professional construction management services.¹⁰⁴

In the traditional method, a construction manager works with both the owner and the design professional. As the owner's agent, the design professional furnishes a design and interprets the contract documents with the owner's best interests at heart. The construction manager further advises both the owner and the design professional to increase project efficiency and constructability.¹⁰⁵ The construction manager also assists both parties by taking over many site services usually performed by the design professional.¹⁰⁶

Even though construction managers are common in traditional design-bid-build projects, the concept is particularly applicable to the design-build method.¹⁰⁷ As discussed, design-build substantially limits the traditional watchdog role of the design professional, creating a significant quality concern. This could result in not only substandard work but also in such inequitable transactions as excessive payments being made early in the project.¹⁰⁸ The potential for misrepresentation and poor construction is thus more apparent than in design-bid-build where the design professional provides the owner with an initial level of security. And many potential design-build owners, even experienced state transportation agencies, lack the skill and sophistication to adequately monitor a design-build contractor's performance on their own.¹⁰⁹

A construction manager can thus provide a valuable service as the owner's representative in design-build projects. A construction manager hired directly by the owner has the authority to intervene on the owner's behalf and to make recommendations regarding major decisions.¹¹⁰ The construction manager's importance is accentuated by the fact that he or she works exclusively for the design-build owner, not in conjunction with the design professional as in the traditional system.¹¹¹ This relationship of trust and confidence between the owner and construction manager can take the place of the watchdog role assumed by the design professional in the traditional method.¹¹²

An independent construction manager has a unique role in design-build projects in various phases of the construction process. In the pre-

104. Linda Chiarelli & Lawrence Chiarelli, *The Role of the Construction Manager on a Design/Build Project*, 15 CONSTRUCTION LAW. 58, 59 (1995).

105. SWEET & SCHINEIER, *supra* note 2, § 17.04, at 349.

106. *Id.*

107. *Prerequisites*, *supra* note 46.

108. *See generally id.*

109. *Id.*

110. Chiarelli & Chiarelli, *supra* note 104, at 59.

111. *Id.* at 60.

112. *Id.* at 60-61.

design phase, a construction manager is critically important in assisting the owner prepare contract specifications and select the design-build entity.¹¹³ In the traditional model, the owner selects and collaborates with a design professional long before preparing bid documents and choosing a contractor. The owner can rely on the design professional to help develop its project concept and to evaluate potential contractors after the project design has been completed. In design-build however, these two steps must be taken at the same time and without the guidance of the design professional. Also, the owner must provide sufficiently technical detail in the initial basic configuration so as to avoid costly change orders later in construction. This may be especially difficult in individual, tailored projects, such as complex transportation projects, where owners may not be sufficiently familiar with the design and construction elements required to bring the initial concept into reality.¹¹⁴

A construction manager is thus extremely helpful in the pre-design phase of a design-build project. The construction manager can provide the technical and management expertise necessary to properly prepare the basic configuration concept in the contract documents.¹¹⁵ Additionally, the construction manager can help the owner assess not only the capabilities of the designer but also those of the potential contractor, increasing the owner's chances of finding the best design-build team available.¹¹⁶ The services of a professional construction manager are thus vital to the owner facing these otherwise daunting pre-design phase tasks.

The services of a construction manager are also uniquely important in the design phase. In a traditional project, the design professional is the owner's representative and will perform the most cost-effective design that can meet the owner's needs. However, as discussed, the design professional's allegiance, and control of project design, is shifted to the design-build entity in a design-build project. Thus the owner must still rely on the expertise of the contractor in proposing alternative design concepts.¹¹⁷ For example, if a contractor who specializes in the construction of steel-framed structures leads the design-build, it would be natural for the engineer to design a steel support system without even considering an alternative, such as a combination of concrete walls and wooden joists. Even if the owner will ultimately receive a quality design, it may not be able to make a fully informed decision regarding the full range of available design options.¹¹⁸ The owner may thus be deprived of the widest op-

113. *Id.* at 60.

114. *Id.*

115. Chiarelli & Chiarelli, *supra* note 104, at 60.

116. *Id.*

117. *Id.*

118. *Id.* at 61.

portunity for selecting the most effective design. However, an independent construction manager could intervene in such a situation and provide the owner with information on options of which the owner would otherwise be unaware. The construction manager in design-build then serves a critical role as the owner's agent, providing an objective evaluation of all design alternatives, even those not considered by the contracting entity.¹¹⁹

Finally, a construction manager can be an essential representative for the owner during the construction phase. As discussed below, a comprehensive quality control program is essential to monitoring a contractor's performance during a design-build project. And a key element of an effective quality control program is periodic progress reports. But without the design professional acting as the owner's representative, a design-build owner would have no option but to rely on the contractor's assessments of its own performance. Such transmissions may very well be reliable but, due to the obvious conflict of interest, would nonetheless cause most owners concern. Thus, an integral part of a construction manager's services includes the independent documentation of the exchange of information between the owner and the design-builder.¹²⁰ The construction manager can assess the validity of contractor reports, reassuring the owner that such communications are truthful and accurate. Additionally, the construction manager can routinely assess the contractor's performance and advise the owner of important project developments. For example, the construction manager could report to the owner when portions of the project are completed and evaluate whether or not the work performed and materials utilized met or exceeded the standards of quality established in the contract documents.¹²¹

Other matters in which the reports of a construction manager would be very beneficial to a design-build owner include whether or not work is progressing according to schedule, evaluating the validity of contractor requests for extensions, alerting the owner when the contractor has a potential claim for additional compensation, and verifying the veracity of such change order claims.¹²² Independent reports from a construction manager can provide the owner much needed assurance that change order claims are not the result of the contractor's own errors in either design or construction. In the event that disputes escalate, the construction manager provides the owner with a personal insight into the construction project that would otherwise be unavailable. The owner has independent

119. Chiarelli & Chiarelli, *supra* note 104, at 61.

120. *Id.* at 60.

121. *Id.* at 61-62.

122. *Id.* at 62.

third voice, a role held by the design professional in the traditional system, to counteract the contractor's claims.

While the retention of an independent construction manager is certainly beneficial to a design-build owner, it does not completely guarantee the integrity of a design-build contractor.¹²³ The construction manager's liability will be generally limited to a good faith effort and the exercise of reasonable skill and judgment in its duties.¹²⁴ Thus, the situation can arise where an owner's construction manager will not be liable to the owner for construction errors. For example, this may occur in situations where the construction manager justifiably relied on the design misrepresentations of the design-build contractor.¹²⁵ This may hold true despite the fact that the public owner took the precaution of hiring the construction manager expressly for the purpose of checking the design and monitoring construction for compliance with the plans and specifications.¹²⁶

Even though the retention of a construction manager is not a fail-safe, it does reintroduce into the design-build model the checks and balances of the traditional project delivery system to some extent.¹²⁷ Potential design-build owners should especially consider this option where they do not have experienced in-house engineering staff or staff availability is limited by other obligations.¹²⁸ However, because construction managers have a limited liability scope, their services will be most effective when used in conjunction with a quality control program, as described below.

C. QUALITY CONTROL SPECIFICATIONS FOR DESIGN-BUILD PROJECTS

Design-build projects generally operate on a much faster pace and broader scale than design-bid-build projects. Design-builders, determined to stay on schedule, may be inclined to avoid time-consuming quality measures, such as inspecting completed work for deficiencies, in order to meet production requirements. This leaves quality enforcement entirely in the hands of the owner, who must take the initiative to perform inspections and demand corrections before making final approval for completed work items. This may be an unacceptable situation for owners.¹²⁹ One

123. See Robinson, *supra* note 38, at 53.

124. *Id.*

125. Aiken County v. BSP Div. of Envirotech Corp., 657 F. Supp. 1339, 1356 (D.S.C. 1986).

126. *Id.* at 1347.

127. Whitney, *supra* note 61, at 93.

128. *Prerequisites*, *supra* note 46.

129. PETE GRAHAM, COLORADO DEPARTMENT OF TRANSPORTATION, *Evaluation of Design-Build Practice in Colorado Project IR IM(CX) 025-3(113)*, Final Report No. CDOT-DTD-R-2001-3, at 12 (2001).

method by which owners can place some quality responsibility back on the design-builder is to require a quality control plan that clearly demonstrates a thorough review of project design, frequency of testing and sampling, qualification of the testing personnel, and reporting procedures.¹³⁰ While a quality control plan may be important for any construction project, it is particularly applicable to the design-build model where the design professional does not offer security for the owner's quality concerns. It forces the contractor to commit to a formal list of quality measures, providing the owner some assurance that completed work has at least been reviewed before the request for approval is made. And a quality control plan does not completely eliminate the owner's quality responsibilities. The owner should still retain responsibility for quality assurance and verify the contractor's adherence to the quality control plan by making random inspections.¹³¹ Such quality assurance oversight can be accomplished through small on-site monitoring staffs performing audits and independent testing of the contractor's quality control efforts.¹³² Three important elements of an effective quality control plan are discussed below.

First, design-build owners should require the design-build entity to establish design review procedures as part of its quality control plan. Design review procedures should clearly demonstrate, through physical records collected according to a document control process, that an appropriate authority has competently reviewed each design element. Design professionals might be required to submit copies of their work, showing proof of revisions and corrections, to quality control personnel before work is approved for construction. Design professionals may be required to follow this process at various stages of the project design development. Proper design review may also require evaluation by several different levels of supervisors, from design professional managers through to project leads, depending on the complexity of the project and the size of the design team. Design-build owners should thus assess their design review expectations early on and direct the contractor to establish quality control procedures accordingly.

Second, the quality of personnel dedicated to quality control efforts should be addressed. Owners should require that contractors dedicate personnel that are independent of the construction team.¹³³ Additionally, such personnel should be experienced quality control professionals, not simply construction employees that happen to be available.¹³⁴ An outside

130. *Id.* at 11.

131. *Id.* at 29.

132. AASHTO JOINT TASK FORCE ON DESIGN-BUILD, *supra* note 10, at para. 6.5.

133. *See* GRAHAM, *supra* note 129, at 25.

134. *Id.* at 26.

and neutral manager who may communicate with, but not report to, the project superintendent should lead this quality control team.¹³⁵ Furthermore, the quality control manager should be based at the project site but prohibited from performing production-related duties to avoid the compromise of the quality control program.¹³⁶ Correspondingly, all other quality control personnel should be independent of the project superintendent and be responsible to the quality control manager or some other outside leader.¹³⁷ While the contractor's construction team may also perform inspections, quality control personnel should be responsible for directly inspecting all project work, regardless of any additional quality efforts made by the construction team. Also, the quality manager should be free to reject any portion of the contractor's work that does not meet specifications. The owner should specify what process the quality manager and contractor should follow to verify the correction of any unacceptable performance. An independent quality control staff will thus allow for an honest evaluation of all project work and a reintroduction, to a small degree, of the tension between the design professional and contractor in the design-bid-build method.

Third, a quality control plan should require contractors to submit project reports on a periodic basis.¹³⁸ Conflicts may arise between a design-builder and an owner over whether or not completed work meets specifications. Without a program addressing how completed items are to be approved by the owner on a regular basis, the contractor will have no clear acceptance process and work will always be "ongoing."¹³⁹ And the owner's input would then be limited to reviewing the final request for approval at the end of the project.¹⁴⁰ At that point, conflicts may be very difficult to resolve because changes or corrections might require costly demolition.¹⁴¹ A good quality control plan should therefore require contractors to submit reports on an intermediate basis, instead of only at the end of a project. The quality control manager should submit reports and evaluations to both the owner (or the owner's representative, such as a construction manager) and the contractor, providing immediate verification of the contractor's performance. Also, the owner's concurrence should be obtained before the contractor's independent quality manager gives the stamp of final approval, and this progression should be documented.¹⁴²

135. *Id.*

136. *Id.* at 25.

137. *Id.* at 26.

138. See generally Friedlander, *supra* note 5.

139. GRAHAM, *supra* note 130, at 20.

140. *Id.*

141. *Id.*

142. *Id.*

V. CONCLUSION

The design-build procurement method is a popular and effective alternative to the traditional design-bid-build model. The design-build system has many advantages, including allowing the design-builder considerable flexibility to incorporate creative and innovative construction methods, which results in more cost-efficient construction and the potential for greatly accelerated project schedules. In particular, state transportation agencies can benefit from design-build when creating and expanding transportation infrastructure systems because the model affords the state greater freedom in specifying its primary construction goals, such as minimizing inconvenience to the public, and selecting a contractor who will effectively meet that goal.

Although the altered role of the design professional creates several significant concerns to potential design-build owners, three steps may be taken to alleviate these pressures. First, design-build owners should address the issue of design risk to ensure that comprehensive coverage is obtained. Three options available to owners in this area are minimum errors and omissions insurance specifications, standalone professional liability policies for contractors, and owner controlled insurance programs. Second, retaining the services of an independent construction manager is an important step towards monitoring performance and guarding against unfair change orders. Finally, owners can ensure that their quality expectations are met by incorporating specific quality control procedures in design-build contracts. Through investing the time and effort necessary to properly address these issues in advance, design-build owners can be more certain of attaining the many benefits of the design-build system while avoiding the possible limitations of this new procurement technique.