

Update of the 1994 Report to the Legislature on the Use of Prototypical Plans by Local School Districts

Prototypical Plans / Stock Plans

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TABLE OF CONTENTS

Introduction 4

Definitions..... 4

Prototypical Plans 5

Stock Plans 6

Conclusion..... 7

References 8

Introduction

The 1994 “Report to the Legislature on the Use of Prototypical Plans by Local School Districts” discussed the use of common school designs within certain school districts. More recently, inquiries have been made to OSPI regarding the availability of “Stock Plans” to be used from one district to another, where in some case, are incorrectly referred to as “Prototypical Plans”. The 1994 report did not explore the use of “stock plans” by multiple districts but only focused on “Prototypical Plans”. This update will explain the difference between “Prototypical Plans” and “Stock Plans” and make recommendations for their use.

Definitions

Prototypical Plans

The use of a common plan for two or more schools that have nearly similar building layouts in plan and elevation, components, and other building systems. Variations may occur to reflect individual identity including color, exterior appearance, site orientation, and other aspects that do not change the general amount of square footage or common components of the facility. Several districts in the state have built the same building plan multiple times in their district.¹

Stock Plans

Sets of completed plan types (elementary, junior high, middle, high schools, and skill centers) which have been used previously to build new or modernized schools and may be available for other districts to use for their district project.

Currently, stock plans for Washington State K–12 school facilities do not exist. In other words, OSPI does not keep copies of school plans for the purposes of being used by other school districts.

¹ As a clarification, RCW 28A.150.260 references prototypical schools to illustrate the level of resources needed to operate a school of a particular size, type, and grade level for funding purposes and is not intended that schools should be operated or structured in a similar fashion as the prototypes defined in the RCW.

Prototypical Plans

Benefits and Constraints of Utilizing Prototype Plans on Multiple Concurrent Projects

Prototype plans are used occasionally by larger school districts in Washington State. The best opportunity for cost savings by utilizing a prototype approach, by far, happens when a prototypical design can be applied to multiple projects planned, designed, and constructed concurrently or over a short period of time in the code jurisdiction. Under such an approach, an economy of scale can develop that allows the design team to moderately decrease effort and corresponding fees to design and document certain building systems.

Designing concurrent schools can allow the district to “bundle” the projects in a GC/CM delivery model. Bundling projects may create more significant savings by encouraging larger, more cost effective general contractors to bid on the work, and by creating more substantial procurement packages for the subcontractors. This strategy is not unlike purchasing bulk goods at a discount retailer.

Some of the potential **benefits** of a prototypical approach may include:

1. Building a greater perception of equity for students and staff between schools with similar programs throughout the district.
2. Some fee savings by creating economies of scale during the planning/design phase (fewer user meetings, application of similar plan adjacencies, etc.)
3. Some fee savings in application of similar systems and detailing during documentation (curtain wall systems, building envelope, mechanical systems, etc.)
4. Economies of scale in procurement of building materials when projects are bundled.
5. Economies of scale in contractor general conditions, fees, and other efficiencies when projects are bundled.
6. Potential change order savings as a single general contractor learns through sequencing construction of multiple similar projects.
7. Possible opportunities to make minor modifications to systems or program based on lessons learned from a previous prototype construction.
8. Identical building systems for future ease of maintenance and operations.

Some of the potential **detriments** of a prototypical approach may include:

1. Site specifics such as utilities locations, lot size and shape, and traffic conditions will require modification of the prototype.

2. Lost efficiencies by not designing a facility that best utilizes the site's natural characteristics such as terrain, native vegetation, daylight orientation, wind, and microclimate.
3. Loss of local community input and reflection of community in their school.
4. Missed opportunities to adapt spaces to meet program needs specific to one school.
5. Challenges adapting a prototype across multiple jurisdictional authorities.
6. Changes to systems or program over time may make use of a prototype baseline too constraining to create the best long term design solution.
7. Prototypical school solutions may be subject to updated codes (requiring redesign) due to the time taken to apply for multiple projects.
8. When using a prototype on sequential projects, modifications are necessary due to changing technologies, permitting requirements, and cultural shifts.
9. Deficiencies found in the design later after occupancy will apply to several buildings rather than just one (i.e. should have had additional office space for itinerant staff.)

Stock Plans

Why this is not a good idea and isn't the best choice for a school district

Typically, districts requesting use of a "stock plan" hope to find cost savings from reduced or eliminated design consultant fees, and by applying a single design solution to all schools. The strategy of "stock plans" has been pursued unsuccessfully by many states. States that have attempted adoption of stock plans have abandoned them before, or soon after, their inaugural uses.²

Challenges that make stock plans ineffective include:

1. Each new project still has substantial operational and management costs, including life safety oversight by an architect of record and engineers of record, jurisdictional documentation, management and reporting, and construction administration oversight such as testing, review of shop drawings, cost review, etc.
2. Stock plans cannot be adapted to conform to the multiple authorities having jurisdiction over a school project (land use, fire, building, life safety, ADA, DOH, LHO, plumbing, Labor and Industries, CC&Rs, etc.). In addition, when stock plans are initially created they meet the applicable building codes and ordinances for that cycle. Once the new code is issued, the stock plan becomes obsolete.
3. Stock plans cannot adapt to changes in education delivery models, changing curriculum needs, such as all-day kindergarten, reduced class size, and STEM incentives.

² Virginia Department of Education. *A feasibility Study for Model School Designs Plans*. 2002

4. Stock plans quickly become outdated as building systems technologies change rapidly.
5. Stock plans do not reflect the specific desires of the school's community and therefore, do not engender "buy-in" from the community nor instill community pride.
6. Stock plans are not flexible to allow for adequate differentiation in building solutions, (e.g. in relation to the vast weather variations throughout the state or varying green building standards.)
7. Stock plans cannot adequately account for unique attributes of site topography and soils conditions, local natural disaster risks, and snow loads.
8. A stock plan would violate the legal right of the architect and their consultants to their intellectual property.
9. The fee savings associated with a stock plan is minimal due to the reasons above.

Conclusion

The Technical Advisory Committee (TAC) is recommending that a "stock plan" catalogue or repository not be established for Washington State school districts to borrow plans already produced and implemented by other districts. TAC recommends that districts complete their educational specifications process, and afterward, if districts see a plan that meets their educational specifications standards that is already designed and constructed, they contact that architect and negotiate a fee to design a similar project(s) adapted to their specific site (following all public works requirements) and compliant with current codes/regulations.

The TAC believes the use of prototypical designs (not "stock plans") can be beneficial to individual school districts that have a particular need to build the same or similar facility multiple times over a short duration. The use of a prototypical design from one district to another is not recommended for reasons stated above, unless specific permission is obtained from the architect of record of the prototypical design and the district that commissioned the original design, and modifications are made to meet the specific educational needs and site conditions of the district requesting their use.

References

Virginia Department of Education. *A feasibility Study for Model School Designs Plans. 2002*

Schoolclearinghouse.org:

<http://www.schoolclearinghouse.org/otherinf/FAQ/FAQPROTO.htm#1>

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