

#### THE HEARST ELEMENTARY SCHOOL CASE STUDY



### THE BENEFITS OF USING MODULAR BUILDINGS FOR CLASSROOM SPACE

## Abstract

Wilmot Modular Structures provided design-build services for Hearst Elementary School in the District of Columbia Public Schools district. The original plan for the classroom expansion project was a one-story building designed to hold a second story. The project was redesigned as a one-story modular building through value engineering and integrated design with the Wilmot team. Site, budget, and schedule constraints were all addressed, and the building was designed to fit in with other campus buildings with limited site disturbance.

The project met district energy efficiency requirements by using a cool roof and low-E tinted windows. Interior technology was fully integrated with campus-wide systems, allowing for a seamless learning experience for students and staff.

Wilmot was able to save the school district almost \$600,000 over their original design and shorten the construction schedule by 18 months.

The Hearst Elementary School Case Study

## Introduction

The Hearst Elementary School is a small school located in Washington, DC. It is focused on providing a rigorous curriculum integrated with exposure to the arts and prides itself on reaching a diverse audience of students. Wilmot Modular was hired to consult and provide what was originally a two-story classroom expansion project. The school district wanted the building to match nearby buildings on the campus, and fit in a steeply graded, small site. There were also budget constraints that had to be managed. Wilmot worked with the District's design team to design and furnish a one-story modular building that met all the District's needs. The building was completed as a design-build project to save both time and money - shaving 18 months off the original two-story project schedule. The building includes six 32-person classrooms and restroom facilities. Due to the siting and construction of the building, the requirement for fire sprinklers was waived, saving the District \$100,000. Sprinklers may be required in new structures for a variety of reasons. Because of the new building's proximity to existing structures, a 1HR fire-rated assembly was required on the left and right elevations. As part of Wilmot's approach, there was also a building to the right elevation that was historical and could not be moved or modified.



Wilmot was able to design with the Civil Engineer and install the building where it sits because the square footage of the new structure, its occupancy type, and the existing structure was considered one building. Consequently, Wilmot did not have to install fire suppression.



The modular structure is designed specifically to fit in with the rest of the campus, both in architectural style and technologically. Custom features match the look of surrounding buildings, and interior tech ensures that the classrooms remain connected to the school's infrastructure.

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## Architecture and Design

Due to site size constraints and the topography of the land, Wilmot revised the District's plan for a two-story building to a one-story modular building, saving the District \$400,000 and 18 months of construction time. A two-story building would have required too much disturbance to the school, as well as cost significantly more. The resulting modular building was designed to match nearby buildings and fit in with the overall campus. To combat the extreme slope of the site (12 feet from front to back), the foundation utilized poured concrete footings and formed piers with steel reinforcement to minimize site disturbance. A traditional foundation would have cost the District significantly more in concrete and excavation costs.

The exterior design included Hardipanel siding, recessed entries, and seamless gutters and downspouts to give the building a permanent look. In addition, metal canopies and ADA ramps were included at both entry points, with a central corridor for efficient access to classrooms and facilities.

For planning purposes, the new building was combined with an existing historical building next door of similar use and purpose. This allowed the team to locate the building on the site and avoid the need for a fire suppression system, saving the District \$100,000. The central egress corridor and availability of egress windows throughout the building were key to this savings.



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The interior finishes included site-installed Corlon flooring, vinyl gypsum wallboard, and acoustical T-grid ceilings with LED lighting. Security cameras and card readers were installed for added security, and integrated with the school's existing systems.



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# **Technical Innovation**

The Hearst Elementary classroom building was designed with an exterior envelope that was energy efficient to meet both code and District requirements. Measures included a reflective white membrane roof and low-E tinted windows to help prevent solar heat gain and prevent glare.



The design included state-of-the-art technology, including digital communication, IT, and an updated security/access system. The building systems were integrated with the main school building and adjacent classrooms, including smart boards, ensuring that teachers had access to the necessary resources and technology for modern learning. The design included high-quality HEPA filtration in the restrooms, in addition to touchless sanitary items as per COVID-19/school guidelines.

The lighting system is made up of high-efficiency LED fixtures with adjustable controls, conserving energy and providing natural lighting when possible.



## Cost Savings

- Site and stormwater management improvements that weren't required due to building siting - \$80,000
- Fire rated exterior walls, removing the need for a fire sprinkler system - \$100,000
- Value engineering two-story plan to one-story -\$400,000 + 18 months from schedule

## Conclusion

Wilmot Modular provided Hearst Elementary School with a classroom expansion project on a tight site with a tight schedule and budget. To save time and money the project was changed from two-story to one-story with minimal site disturbance. The building was given a permanent look without the loss of versatility and speed from a modular design. In addition, the design met both program and energy efficiency goals, including State Building and Energy Efficiency requirements and local jurisdiction COM checks.

Modular, or prefabricated, buildings help cut down on construction costs and project completion time when compared to expanding a school with traditional construction. Especially in times of rapid growth, modular classrooms can be easily relocated or expanded to accommodate the growth of your school district, ensuring that you have the space you need for your enrolled students. When customers are growing faster than they can accommodate new students in existing facilities they need swing space or new buildings to support the influx of students/teachers. Why are modular buildings quicker? They are built offsite, which means teams can prepare the foundation on-site at the same time the building is being constructed. Also, the weather doesn't affect construction, as the buildings are prefabricated in a controlled factory setting.

From a single classroom to a multi-classroom facility, Wilmot can design and deliver the right custom modular space you need. Some examples include classrooms, libraries, science labs, administrative offices, health suites, and more.

#### **WILMOT** MODULAR STRUCTURES, Inc. We Help Build Visions

For assistance planning for a modular building, watch our video Planning for Your Modular Building or Classroom.

Contact us if you'd like to request a quote or call us at **1-800-966-8883.**