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# Teamwork key to opening Whatcom Middle School a year early after fire

'It's really a miracle'

KIRA M. COX / THE BELLINGHAM HERALD

BELLINGHAM - When Whatcom Middle School caught fire Nov. 5, 2009, many people expected the school would be closed for years, if it ever reopened.

But on Tuesday, Sept. 6, less than two years after the fire destroyed the school's roof and top floor and water flooded the bottom floor, Whatcom Middle School will reopen to students and staff.

"It's really a miracle if you think about what's happened in the span of 21 months," said Ron Cowan, assistant superintendent of business and operations and the man who oversaw the project for the Bellingham School District. "It's a testament to what I would say is probably the most cooperative effort I've ever witnessed by the most talented team I have ever been associated with in 30 years of doing this (working in education)."

It would be no small task to resurrect the main section of the historic building that has been a fixture in the community for more than a century. By the end of the project, only the two front entrances, which thousands of students have poured through over generations, remained intact: the rediscovered 1903 original school entrance and the iconic main entrance with its towering columns and "Waste Not Thy Hour" motto chiseled above the door.

The rest of the main building would be demolished, then rebuilt.

To make the September 2011 opening, a year earlier than district officials had promised school families and staff, several entities had to come together and make decisions quickly: Bellingham School District officials, engineers from Reid Middleton, architects and designers from Dykeman, representatives from the district's insurance co-op Schools Insurance Association of Washington, city of Bellingham permiters and inspectors, and Dawson Construction and its subcontractors.

"With this process, everybody just kind of stepped up," said John Jones, managing principal at Dykeman, based in Everett. "It was a total collaboration effort."

## AMBITIOUS GOAL SET

Most everyone involved in the project thought a September 2011 opening was out of the question - at first.

"When we first started really trying to sketch this thing out, we really thought it was going to be the fall of 2012," Cowan said. "I just didn't see how we were going to get through the design process, permitting process, bidding process and all of the things you need to get a project to go.

"I thought it was going to take three years before we can get this thing open," he continued. "As it turns out, because of a great team ... we were able to beat that by a year."

The project was split into three parts: emergency stabilization work to make the building safe enough for inspectors and engineers to enter; core and shell, which included the creation of the new exterior walls and the demolition of almost all of the original school; and "phase 3," which included building the interior and completing the project.

Bellingham-based Dawson Construction, which had been hired by the district just days after the fire to do the emergency stabilization work, continued with the core and shell part of the project in summer 2010.

About the same time, the district started looking for an architectural firm to redesign the school's interior to fit within essentially the same footprint but upgrade it for modern student needs.

"We looked at the schedule and thought, what could we do to get it done a year early," Jones said. So they brought the idea up during the bid interview.

"My opinion was there was just barely enough time," Jones added. "If we waited a month longer, then it wouldn't happen."

The district didn't publically announce the new timeline until February 2011, after Dawson Construction had won the bid for "phase 3" of the contract. That gave construction crews only about six months to build the entire interior and get it ready for opening.

"I knew it was achievable, but I also knew it was a tall order," said John Stimson, Dawson Construction project manager. "It was going to require the cooperation of a lot of entities. When you walk into (a project) you never know who the other team players are going to be.

"But to sum it up in one word, the one thing that made it successful was teamwork, top to bottom."

Normally designing and building a school takes a couple or more years: A team of people fully designs the building, and then plans how to build it. Then the city or county has to approve the plans, and the project goes out for public bid. Finally the school is built and then inspected all at once before opening.

But for the Whatcom project, everyone agreed to design it in phases, get it permitted in phases, construct it in phases and get it inspected in phases.

While construction crews were finishing the shell, engineers and architects were designing the interior. After the exterior of the school was created, crews split the building into three sections. As soon as crews finished structural work in one part of the building, another set of construction crews moved in right behind to frame walls and do rough-ins for mechanical systems. While crews were working on the main building, the design team was back at the drawing board, figuring out how to connect all the "outbuildings" on the property, including the gym/auditorium part of the school and the shop, Stimson said.

"It was kind of like a rolling train," said Jim Tinner, building official for Bellingham. "Subcontractor, inspector, next contractor and so on; we worked through the building like that."

The site was almost always a buzz of activity, with as many as 150 construction workers there Monday through Saturday and even some Sundays. Inspectors were coming and going on an almost daily basis during the busiest times. Engineers and architects regularly checked in with construction crews to make sure there were no problems. Insurance representatives worked with the district to make sure everything was approved and could be paid for.

"Any one of those groups could have derailed the whole thing and we wouldn't be opening," Cowan said.

Many people involved in the project believe the city's allowance of phased permitting and inspection was one of the big reasons the project was able to move so quickly. Tinner said phased inspections aren't normal and caused strain on the city office, which has had layoffs in the past few years, but it was an important enough project that they put "non-critical" items on the back burner.

"We were there virtually every day," Tinner said, later adding, "This project is an extreme community importance. We're talking hundreds and hundreds of kids and parents that rely on their kids to be back in class."

The speed of the progress on the building shocked many, including project manager Stimson.

"I've never been involved in anything quite like it," he said.

"I would go on Tuesday and Thursday every week," he said, "and the progress made in between each time there was just phenomenal."

## **TACKLING CHALLENGES**

While the project moved smoothly for the most part, the shortened timeline did create some challenges.

There were the normal kinds of disagreements between the various groups, as with any construction project, Cowan said. Rather than continually argue, they worked through the problems and continued on.

But a larger concern to some involved was the project started without anyone being entirely sure how the "outbuildings" on the property would fit with the new building.

Since the damage was almost entirely in the main part of Whatcom's building, that's where everyone focused, knowing that they would have to come back to address the gym/auditorium section and other parts of the school, said Jones from Dykeman.

The challenges came in physically connecting the gym and auditorium areas to the school because the main building's footprint increased by about 1,000 square feet due to the new exterior walls being constructed around the burned structure. There also were challenges connecting the new modern electrical and mechanical systems to the older systems in the outbuildings.

Work tying the new structure to the existing gym and auditorium was added to the project after Dawson had already started working on phase 3, Stimson said. So while crews were "going gangbusters" trying to finish the primary building, the design team was working out how to finish the structural problems with the outbuildings. Then when the structural work was done on the main building, crews moved on to the outbuildings.

There also were issues with the soil on the site, some of the "worst" Jones had ever seen. During the rainy parts of the year, concrete on the school basketball court area and Halleck Street could be seen moving beneath the heavy equipment.

Due to that, the basketball court area and Halleck Street in front of the school had to be replaced, which wasn't part of the original plan.

As of Aug. 25, there were nine change orders involved with the project, the outbuilding and road work being the two most expensive. In all, the change orders cost about \$2.2 million, bringing the final construction cost of the school to \$15.7 million.

Other areas that could have been challenges for the project went well.

For example, designing a school to fit into a specific place can be difficult; however in this case, it ended up making it easier for people to settle on decisions because there were fewer options to choose from.

"Really, I can't imagine it going smoother... given the scope of work and the timeframe," said Stimson. "'Failure is not an option' was something in the back of everyone's mind."

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## **REBUILD BY THE NUMBERS**

Materials used to rebuild Whatcom Middle School:

- 2,000 yards of shotcrete (the material used to create the new exterior walls)
- 2,300 yards of concrete
- 615 tons of rebar
- 550 tons of structural steel
- 350,000 square feet of drywall
- 35,000 square feet of ground and polished concrete floors
- 13,800 square feet of gymnasium wood floors
- 40,000 square feet of ceramic tile, sheet vinyl and carpet floors
- 3,000 feet of cabinets
- 900 light fixtures
- 19 miles of electrical conduit
- 76 miles of electrical wire for power systems
- 40 miles of data cabling.

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