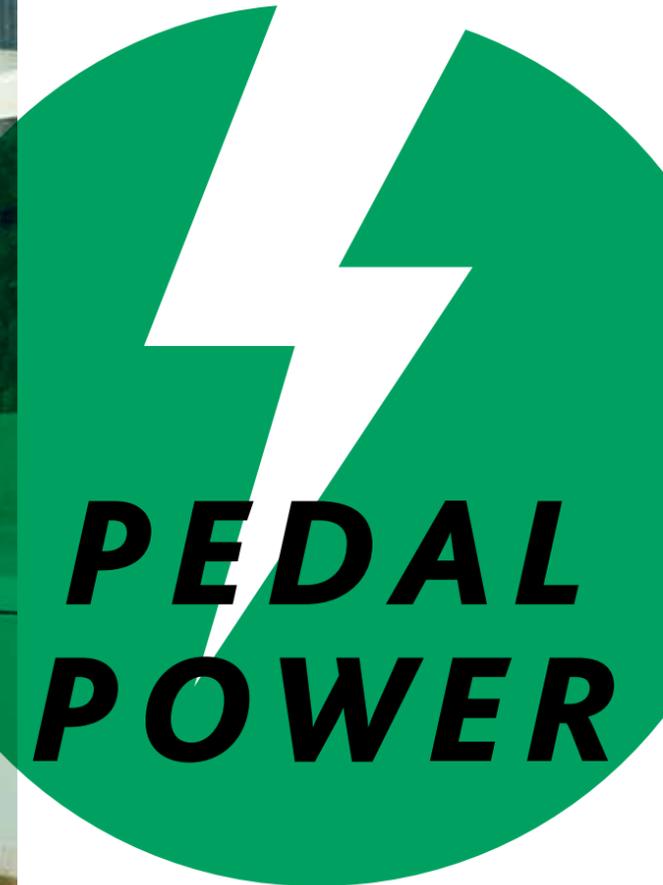


Stationsplein bicycle
parking garage in Utrecht,
the Netherlands



A Dutch project
team learned
to shift gears to
build the world's
largest bicycle
parking garage.

BY AMBREEN ALI

SO MANY BICYCLES. NOT ENOUGH PARKING.

That's the problem for cities across the Netherlands, where cycling is a way of life, with 1 in 4 people riding bikes to work. Pedal power is even greater in Utrecht, the country's fourth-largest and fastest-growing city. With almost half of all trips of less than 7.5 kilometers (4.6 miles) completed via bicycle, two-wheel traffic began to create a bike jungle at the city's urban core. Commuters would lock up their bikes around the Utrecht Central Train Station and hop on the train or venture into the nearby shopping center.

As bike-clogged streets crowded out foot traffic, the Utrecht government started looking for a solution that would ease congestion and also help transform the surrounding Station Square neighborhood, including the rail station and shopping mall. City officials eventually landed on the idea of launching a project to build the world's largest bicycle parking garage. (The regional government and the country's national train service also sponsored the project.)

The €48 million Stationsplein bicycle parking garage opened in August with 6,000 of a planned 12,500 parking racks available. An additional 1,500

racks were completed in October. The rest of the racks will be ready when phase two construction of the three-level garage wraps up later this year.

"The main goal was to improve the quality of the public space around the station and make the area more attractive so people want to stay there," says Rutger Siderius, a senior project manager at project management consultant firm Procap, Utrecht. "That meant, among other things, having no more bikes on the street level." (Procap represented the Utrecht government during the planning and design phase; engineering company Royal HaskoningDHV and Ector Hoogstad Architecture were in charge of design; and general contractor BAM is in charge of execution.)

Despite immense public support for the station and development project, preliminary planning was mired in disagreements for six years among sponsors and other stakeholders—including shopping center property owner Klépierre and Dutch railway companies Prorail and NS. Even after city officials agreed to a new plan in 2010 with the garage connecting the railway station and shopping mall, the challenges didn't end for the project team. It also had to gather feedback from the cyclist community

to help it define ultimate benefits. And it had to navigate complexity and ensure safety in an area with other construction projects underway.

MAINTAINING MOMENTUM

When design planning began in 2010, the proj-

ect team was determined to avoid the inertia that plagued the preliminary planning process. That meant keeping all stakeholders aligned and engaged—including representatives from the rail station and shopping mall whose customers would be the primary users of the garage.



The bike facility is part of a redevelopment of Utrecht's railway station.

PHOTOS COURTESY OF ROYAL HASKONINGDHV AND CU2030

LIFE CYCLE

2010: The city of Utrecht, the Netherlands, greenlights the functional design for the world's largest bicycle parking garage

2012: Preliminary design phase completed

2013: Design phase completed

2014: Construction phase begins

August 2017: Phase one construction completed and first section of garage opens; phase two construction begins



"The biggest challenge was keeping all the players going in the same direction."

—Rutger Siderius, Procap, Utrecht, the Netherlands



Stationsplein will hold 12,500 bikes by the end of 2018.

“Having this constant communication means that all stakeholders will understand the decision, even if they don’t agree with it.”
 —Ellen Wijnant, Royal HaskoningDHV, Amsterdam, the Netherlands

TALENT SPOTLIGHT



Ellen Wijnant, senior project manager, Royal HaskoningDHV

Location: Amsterdam, the Netherlands

Experience: 26 years

Other notable projects:

■ **National Aerospace Laboratory, a renovation and construction project completed in 2016 in the Netherlands. Ms. Wijnant served as design manager.**

■ **Flevo Hospital, a medical center expansion project completed in 2012. Ms. Wijnant served as construction manager.**

Career lesson learned: “If you put effort into improving your team, it will perform well. Together, you can make the team even stronger by discussing the tasks and roles people really want.”

“Before we started, the goals of the station and those of the shopping mall were quite different,” Mr. Siderius says. “The biggest challenge was keeping all the players going in the same direction.”

For instance, the mall’s project representatives wanted to make it safe and easy for people to walk between the shopping center and the station during garage construction. The station stakeholders also wanted a design that would be attractive to the public. So project managers prioritized those goals and initiated a face-to-face workshop with stakeholders to develop a final design, Mr. Siderius says.

“At the start, we developed an integrated set of requirements with all the most important partners,” he says.

The payoff? Architects were able to develop three models more quickly, and project managers were able to foster an environment of trust and collaboration. After the mall and station stakeholders found common ground on a final design, city officials agreed to yield to their preferences—in part because the officials knew it would help keep the project on track, Mr. Siderius says. Similar stakeholder meetings continued even after the design phase was completed. Those meetings allowed the team to more easily identify and resolve any pain points external stakeholders brought to the table.

“We were open and transparent in our communication. If we had issues with partners about solutions, we talked in detail about the reasons why, and most of the time we could solve the issue,” Mr. Siderius says. “Occasionally, we had to escalate the issue to the executive directors of the partners.”

For example, the initial street design in front of the garage was straight. But Klépierre suggested that the street curve toward the station so there would be more space for the shopping center. Project managers weighed aesthetic benefits and

timeline drawbacks to this change and then turned to executive directors, who chose the curved street design, Mr. Siderius says.

RIDING HIGH

The ultimate risk was building a garage that cyclists wouldn’t use. So project managers developed a focus group that included Utrecht’s bicycling program manager as well as members of partner organizations that operate and maintain bicycle-parking facilities. The focus group met regularly to review the project plan and provide input from the perspective of a user. Project managers also consulted members of a cycling advocacy group during the start of the design phase, Mr. Siderius says.

Among other goals, the cyclist focus groups stressed the need to create a design that would allow cyclists to get in and out of the garage quickly. Otherwise, they would opt to park outside, particularly if they were running late to catch a train. The architect addressed this requirement by designing a low-slope ramp that enabled easy cycling through the garage’s three levels—an innovation that hadn’t been



“Your project management plan has to anticipate [scope] changes.”

—Erica van Dijk, City of Utrecht, the Netherlands



incorporated in any other bicycle garage. At other garages, cyclists had to walk their bikes in and out of the garage. As a result of the ramp, first-time users are able to park in about three minutes, while more frequent users learn to park in about one minute.

“The most important benefit is that people are using the garage,” Mr. Siderius says. “Even when we were only halfway finished, it was almost full. That’s quite a success.”

SHIFTING GEARS

The biggest challenge for keeping construction on track turned out to be other projects. By the time construction began in 2014, several development and improvement initiatives in the area had been launched, thanks to a resurging economy. That resulted in a crowded work area that forced garage project managers to adjust the scope to accommodate all construction schedules. The opening of the garage had to be postponed until work on surrounding projects advanced, says Erica van Dijk, a project manager for the city government’s Stationsplein efforts, Utrecht.

BIKE PATH

Here's why demand for cycling infrastructure is high in the Netherlands.



1.3

Number of bicycles owned per capita



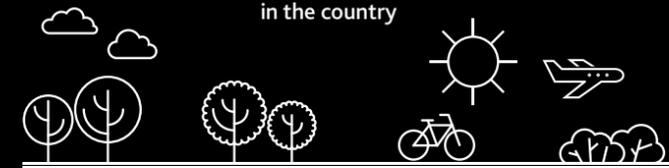
22.5 million

Number of bicycles in the country



More than 25%

Proportion of people who ride bicycles to work



1,000 kilometers (621 miles)

Estimated average distance each Dutch person cycles per year

Source: European Cyclists Federation

Most of the changes to the garage construction plan forced by adjacent projects concerned structural issues, such as when surrounding real estate developments impacted the garage's foundation. There was no negative impact to the project budget, Ms. van Dijk says. Some extra costs were covered by contingencies, while in other cases the party requesting the scope change covered the cost.

"Your project management plan has to anticipate these changes," she says. "And you need to leave some room in your planning and budget to deal with that."

When other developers requested a change that would alter the bike garage's construction schedule, project managers consulted the technical plan and Royal HaskoningDHV to determine which changes were technically achievable, how they would affect costs and schedule, and whether an alternative solution was available, Mr. Siderius says.

"Scope changes cannot be avoided in a long project such as this one. Possible changes have to be discussed with all teams to gain support," says Ellen Wijnant, senior project manager, Royal HaskoningDHV, Amsterdam, the Netherlands. "Having this constant communication means that all stakeholders will understand the decision, even if they don't agree with it."

In the end, the first phase of the bicycle garage opened 13 months behind schedule. But there was a benefit: The team was able to complete 50 percent more parking spaces by the end of the first construction phase than the original plan had required.

TRAINING WHEELS

Documenting lessons learned helped the project team avoid further delays and is helping accelerate the final phase of construction. The project team has held frequent interviews with workers and other stakeholders during each phase to capture lessons—and shared them with the team to ensure they improve work going forward. For instance, during the second construction phase—which is primarily focused on building out the south side of the garage—the team plans to install interior finishes, such as cameras and communications equipment, earlier in the process. Being able to install

"The most important benefit is that people are using the garage."

—Rutger Siderius



There's a special zone for non-standard bikes, such as cargo bikes.



such items earlier will minimize the deadline pressure workers felt during phase one construction, and it will ensure that the features are better integrated in the structure, Ms. van Dijk explains.

The team also is using the same contractor for the preparation phase and the building phase to reduce the risk of delays in the second construction phase. That will minimize the time needed to bring a contractor up to speed on the project.

Lessons learned will also inform future bike garage initiatives, whether in Utrecht or beyond. A survey conducted by project managers at the start of the project estimated the city needs parking for 22,000 bikes around the station, Mr. Siderius says, so other garages have been built and more likely will be built in another part of Utrecht to meet that need. Additionally, bike garage projects in The Hague and Amsterdam are underway or being planned.

"Our engineers are very proud of the integrated design of the structure. This part of the city center will be a much nicer place to visit," Ms. Wijnant says. "Our slogan at Royal HaskoningDHV is 'enhancing society together.' With this project, we really achieved that." **PM**