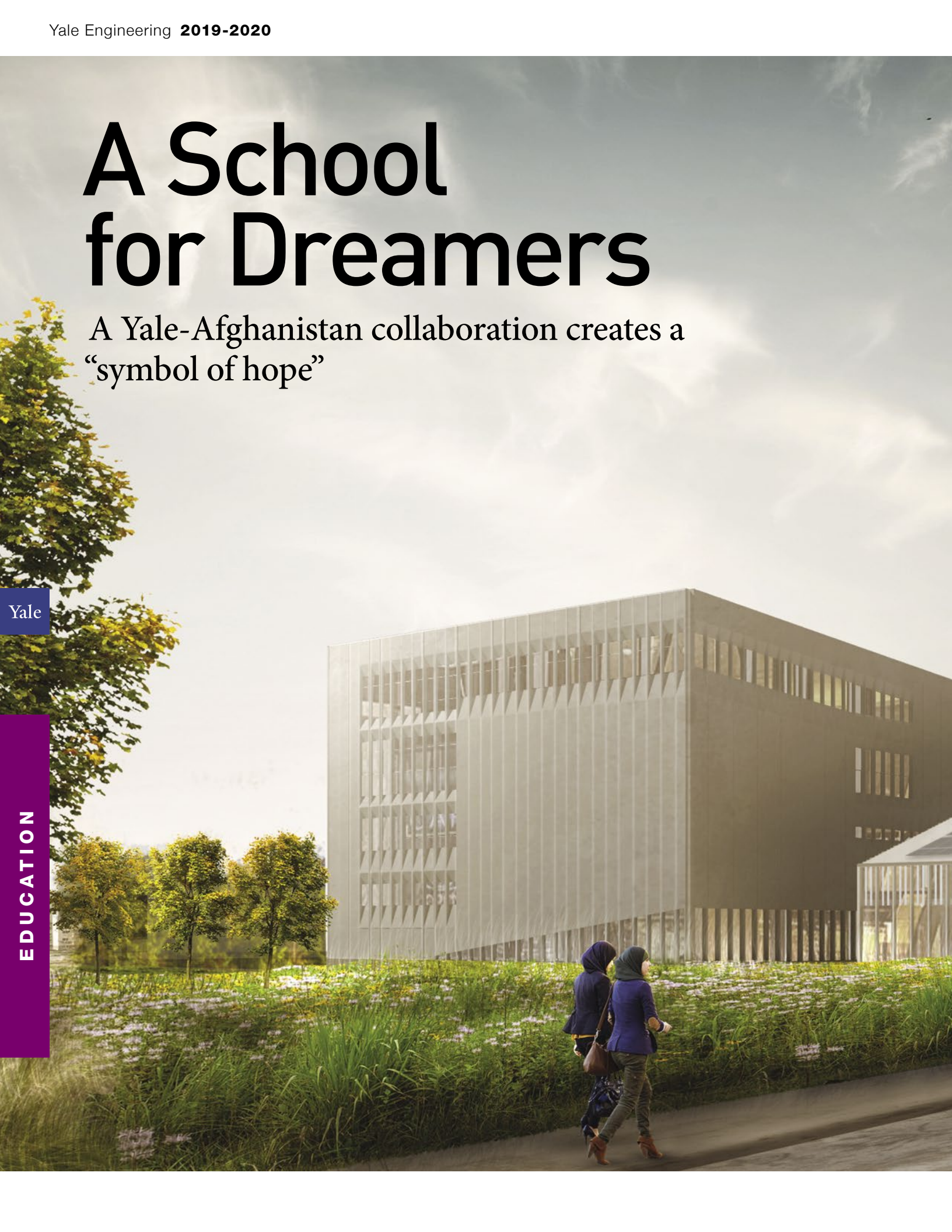


# A School for Dreamers

A Yale-Afghanistan collaboration creates a  
“symbol of hope”

Yale

EDUCATION





When a team of high school girls from Afghanistan was initially denied visas to enter the U.S. for FIRST Global, the international robotics competition in 2017, the setback proved only temporary.

The story of the team's plight made international news and gained support from U.S. legislators and the president. And it set in motion a collaboration between Yale and the team's coach, entrepreneur Roya Mahboob, to design a technology school for high school students in Afghanistan. The school, to be called The Dreamer Institute, is particularly remarkable because it will be attended by both boys and girls. In a country that has only recently started to accept women in science, such a school would have been impossible just a few years ago.

The collaboration brings together Yale's School of Engineering & Applied Science (SEAS), the School of Architecture, and the Whitney and Betty MacMillan Center for International and Area Studies at Yale.

The Dreamer Institute, to be built in Kabul, will focus on robotics, artificial intelligence and blockchain, and will consist of two interlocking buildings on the campus of Kabul University. One building is the high school, to be attended by girls for one half of the day and by boys the other half. The other is an innovation center based partly on Yale's Center for Engineering Innovation & Design (CEID), which would be shared by the high school students and students from Kabul University.

Continued →







Mahboob, an entrepreneur from Afghanistan and a founder of numerous startups, said the idea for the school was sparked by the team’s tour of North America. Their visits to numerous tech-based high schools fascinated the team members, who had little exposure to technology training until joining the robotics team.

“We went to these schools and saw how the students worked together — all the girls wanted this back home,” Mahboob said. “We did some research about STEM schools and figured out what we needed to bring one to Afghanistan.”

Through Yale’s work with FIRST Global, Mahboob mentioned the idea to Vincent Wilczynski, deputy dean of SEAS and director of the CEID.

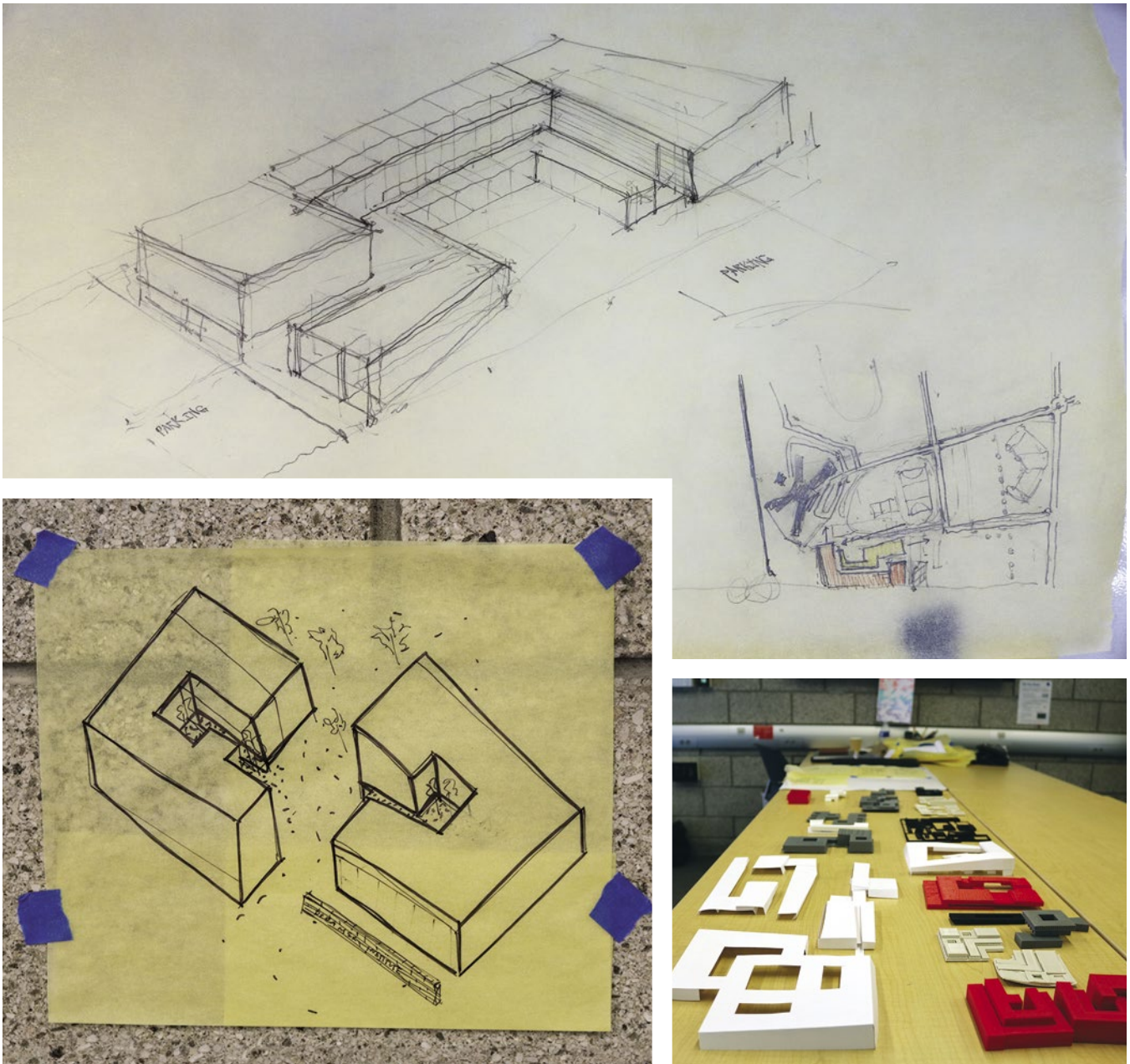
“When I heard Roya’s idea, I thought ‘Yale could do this, and Yale should do this,’” Wilczynski said. “There was a need, and we have the resources, we have the people, and

Above and Below Left: Mahboob meets and discusses the needs of the project with the Yale School of Architecture team at the Center for Engineering Innovation & Design.

Below Right: Mahboob and Wilczynski discuss the Dreamer Institute at the Yale-hosted International Symposium on Academic Makerspaces (ISAM).

we have the talent. All of us coming together to do this is reflective of what’s possible at Yale.”

He sent out a few emails and a collaboration was soon struck between SEAS, Architecture and the MacMillan Center. From there, things moved fast. Sunil Bald, associate dean for curriculum and admissions for the architecture school, led a team of five architecture students, working out of the CEID for four weeks over the summer to draw up the plans for the 150,000 square feet of building space. The project presented unique challenges to the student team of Michelle Badr, Camille Chabrol, Deo Deiparine, Alexandra Pineda, and Jerome Tryon. Among



them was figuring out how to combine traditional aspects of Afghan architecture with more modern elements, creating a secure space while maintaining a sense of openness, and how to make the building adaptable to a country with a quickly changing cultural environment.

“This is a pretty unique endeavor in terms of having a group of students working with a faculty member to design something that we hope will see the light of day in another part of the world,” Bald said. “To see these kinds of tangible results in such a short amount of time has been really encouraging.”

Bald and the students presented the final designs to Mahboob at the School of Architecture Gallery.

Above: The Yale School of Architecture team sketched and created numerous prototypes that feature two interlocking buildings.

“It was amazing,” Mahboob said after the presentation. “I had envisioned it with a totally different design, and then I come here and they bring this very innovative scheme for the buildings. Thank you for making the dream come true. I hope you can one day come to Afghanistan and see the school. It is a symbol of the future of Afghanistan and especially the young people.”

Through Yale’s work with FIRST Global, Mahboob, the first female CEO for a tech company from Afghanistan, said this kind of

Continued →





plan would have been a non-starter in her country a few years ago.

“But now, you see a lot of women as owners of companies or forming technology groups robotics, animations or

Above: (l to r) Jerome Tryon, associate dean of architecture Sunil Bald, Deo Deiparine, Camille Chabrol, Roya Mahboob, dean of architecture Deborah Berke, Alexandra Pineda, and Michelle Badr.

Below: Mahboob holds a final prototype of the Dreamer Institute which could be built as early as 2021.

coding. The perceptions of women’s ability in science and technology and engineering have changed.”

A lot of that has to do with the robotics team that toured the world.

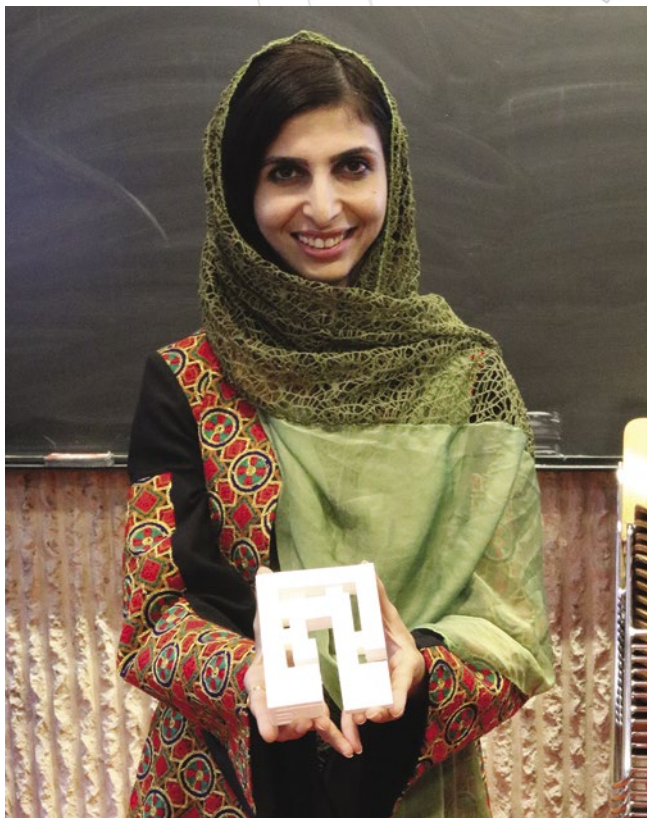
“It just changed the whole country,” she said. “It became a symbol of hope and unity and courage for many young generations, especially women. Even more conservative people saw this and said, ‘OK women can be mentors or designers or scientists.’ That was a huge shift.”

George Joseph, executive director of the MacMillan Center, said the project is a “perfect opportunity to bring together a number of entities across Yale.” He noted that much of the center’s financial support that goes to faculty and students is for “more standard academic modes of communication.”

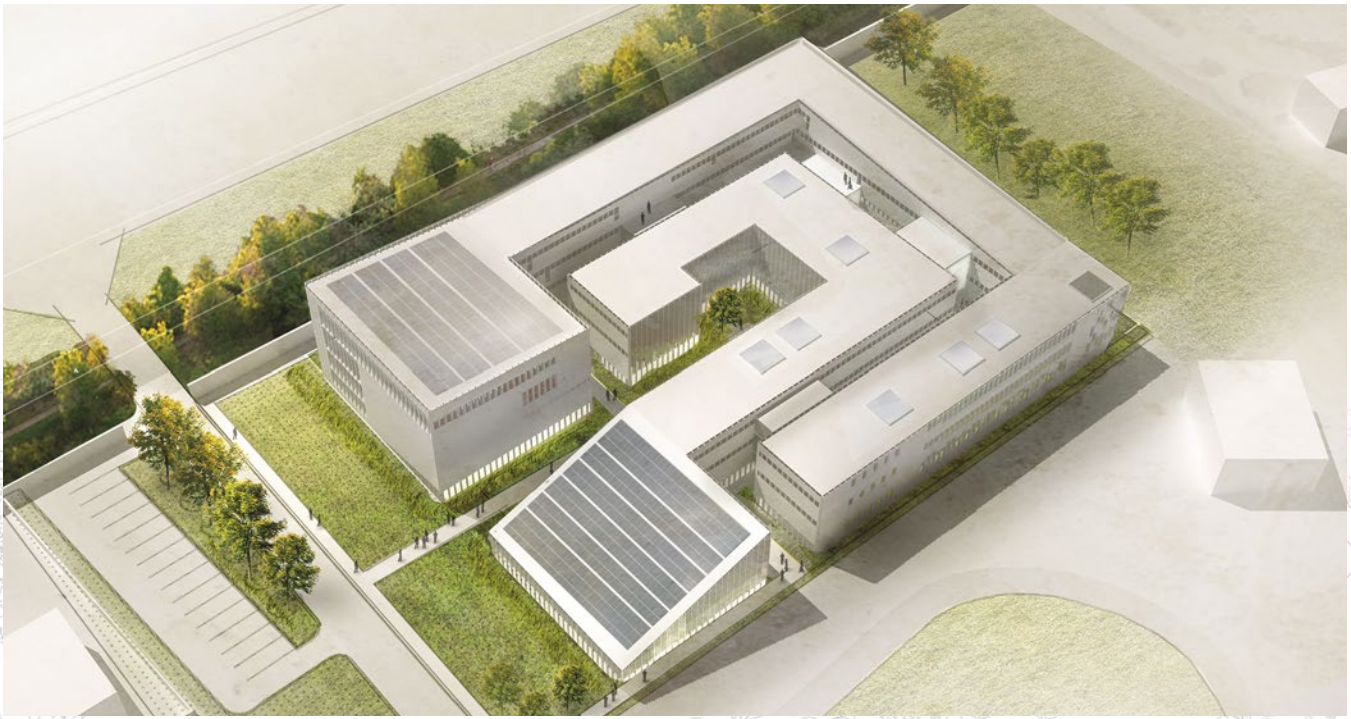
“To see a real-world application of our effort, it’s very inspiring,” Joseph said. “The potential for impact that this could have, not only on these girls in Afghanistan, but on Afghanistan as a whole — that motivates us for why we do what we do at MacMillan.”

Architecture student Michelle Badr said she jumped at the chance to be part of the team. Being of Afghan descent, she felt especially connected to the project’s goals.

“It was incredibly meaningful to be able to do a project based in Afghanistan,” she said. “My parents fled dur-







ing the Soviet invasion, so for me, this was very much my chance to give back to the homeland that I've been part of only in terms of a diaspora relationship."

The team consulted with Mahboob numerous times while putting together the design.

"Roya is always giving us such visionary words and talking about a society that's moving forward and not tied to the past," said Alexandra Pineda. "One of the things that came up in discussion was 'What does this building mean for Afghanistan, and what is this doing for the identity of Afghanistan?'"

"It's also really exciting interacting with Roya because she sees the building as a sign of optimism for how the political context can improve in Afghanistan," added Deo Deiparine. "So the building becomes a symbol of hope, or of a more progressive society."

But there were also some practical matters that the architects had to consider. For one, a high school teaching technology to girls could still stir controversy in Afghanistan despite the progress that's been made there. To that end, the architects consulted with a civil engineer familiar with Afghan architecture who suggested that they add some complexity to the interior. That would make it difficult for someone unfamiliar with the building to make their way around.

"It was interesting working with Roya because it's a project about investing in youth and it has some radical ideas about education, but then we also talked about the functional things like security and maintenance," said Camille Chabrol.

A school that looks toward the future while maintaining its Afghan identity can be a delicate balance to strike, but everyone involved agreed that they had succeeded.

"The building is aspirational, it's hopeful, but at the same time, it's very grounded," said Jerome Tryon, also of the student team.

Mahboob said the building, if all goes according to plan, would be up and running in 2021. She's currently seeking funding for the construction from various sources, including the Afghanistan government, and plans to present the design to the president. Further down the road, she said, more Dreamer Institutes could be built around the globe.

"All countries need to focus on student development, and they have to start investing in them today," she said. "The idea of the Dreamer Institute is to give students access to emerging technologies, where there's a much bigger gap between the richest and poorest countries. Countries and governments are responsible for making sure that this knowledge is in the hands of the young generations." 🇺🇸