Case study

i.am.angel Foundation

HP Z Workstations, 3DEXPERIENCE software at Roosevelt High School integrates 3D modeling program to help transform lives

Industry
Education
Non-profit community foundation

Objective
Provide technology to enable students to learn 3D design and engineering using professional tools

Approach
The i.am.angel Foundation has equipped its lab supporting 3D design and engineering with HP Z Workstations

IT matters
- HP Z Workstations are certified to run the most demanding 3D modeling and engineering applications, including Dassault Systèmes' 3DEXPERIENCE platform

Business matters
- Students learn from an industry leader to run professional 3D modeling and engineering software on professional HP Z Workstations
- First-ever robotics team at LA's Roosevelt High School competes in the FIRST robotics competition

"The power of HP Z Workstations means students can explore their skills at a very high level. They're an ideal fit for the vision will.i.am has for the community of Boyle Heights."

– Enrique Legaspi, teacher, Roosevelt High School

When musician and entertainer will.i.am created the i.am.angel Foundation, a primary goal was to transform the lives of young people through education, inspiration and opportunity. The non-profit's i.am STEAM program trains students from all backgrounds in Science, Technology, Engineering, Arts and Mathematics to compete for jobs of the future. Educational opportunities in 3D modeling and engineering use HP Z Workstations running 3DEXPERIENCE software from Dassault Systèmes to encourage students to think big and apply their skills to help solve global challenges.

HP recommends Windows.

Seven-time Grammy Award-winning musician Will.i.am is widely known for his work with The Black-Eyed Peas. Since then, he has become a multifaceted entertainer and creative technology innovator who works passionately to give something back to his neighborhood and transform lives through education.

When will.i.am was growing up, his Los Angeles neighborhood of Boyle Heights was a thriving industrial area. Today, he says, it's an industrial desert. His dream is to transform the neighborhood by connecting people with talent and skills to give young people new opportunities, to help them build lives and successful careers, to foster growth and a healthy future.

Inspiring, and challenging students

He started the i.am.angel Foundation as the launching pad to achieve those goals. Among the Foundation's various initiatives is i.am College Track, an after-school tutoring program that serves college-bound high school students who attend LA's Roosevelt High School. They receive intensive tutoring and instruction, along with opportunities that wouldn't exist without the i.am.angel Foundation.

"i.am College Track is one of our cornerstone programs," explains Tatiana Litvin, Executive Director of the i.am.angel Foundation. "It's Will's vision to inspire kids in the community, and also to ensure that we provide the experts and support to help them navigate high school and college."

i.am College Track is designed to expose students to opportunity, then challenge them to do the work that will lead to success. One such opportunity is the Foundation's i.am STEAM initiative.

"The fact is, 47% of students who live in poverty are going to continue in poverty. We believe that STEAM education can help them overcome that. Technology is the way out." says Lilly Kam, Director of STEM at i.am.angel Foundation. "Our students must learn how to create technology, not just consume it. Through collaboration with leading technology companies like HP, we can empower students with the skills needed to compete for 21st century jobs and be part of the innovation economy."

Professional technology at work

Through i.am STEAM, the Foundation gives students opportunities that they wouldn't otherwise have. In fact, it gives them opportunities that few high school students would have.

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Take, for example, the 3D modeling/ engineering program featuring software from Dassault Systèmes on HP Z Workstations. It started when Foundation representatives began a collaboration with Dassault to enable Roosevelt High School students to use the company's 3DEXPERIENCE software platform, primarily the powerful CATIA solution for 3D modeling.

Since Dassault certifies 3DEXPERIENCE software performance with HP Z Workstations, the company coordinated with HP for appropriate hardware to support the program. Soon after, the i.am.angel Foundation launched a new lab at Roosevelt High School featuring a mix of HP Z820 and Z420 Workstations.

"It was important to provide students with professional workstations to ensure an engaging, professional experience," explains

HP recommends Windows.

Mark TenEyck, senior sales executive with Dassault Systèmes. “If they tried to run the software on less capable hardware, operations would take so long the kids would get bored. We know that won’t happen with HP Workstations because they’re fast and stable—just what you need for demanding software solutions like CATIA.”

> “HP Workstations provide a whole different level of experience—a more professional experience. Students are able to see, to do and imagine so much more.”
>
> – Enrique Legaspi, teacher, Roosevelt High School

They are, in fact, the same workstations used by design professionals using the 3DEXPERIENCE platform to deliver industry-leading design and engineering solutions in Aerospace, Defense, Automotive, Transportation, Utilities, Consumer Products, Industrial Equipment, and other market segments.

“It’s great that we’re able to give our students the tools to ensure they can do powerful design work and projects that are meaningful,” says Enrique Legaspi, a STEAM teacher at Roosevelt High School. “The power of HP Workstations means students can explore their skills at a very high level. They’re an ideal fit for the vision will.i.am has for the community of Boyle Heights.”

The i.am.angel Foundation worked with East Los Angeles Community College to get the class accredited so that even as high school students, participants are earning college credit.

Creating collaborative experiences

Legaspi says the workstations facilitated both individual and collaborative projects. Many of the students—who remain in an underserved school district and, statistically, are at high risk for dropping out—would routinely come to school early in order to get extra time to work on the HP Workstations and their design projects.

The collaborative nature of design contributed to the students’ enthusiasm for the program. “We’ve seen that as students work together, they drive each other to keep improving,” Legaspi says. “We want to inspire students to innovate. We want them to develop skill sets that will enable them to bring their ideas to life.”

Since will.i.am’s career revolves around the music industry, students in the design and engineering class were challenged to tackle an unusual assignment: design brand new musical instruments for the 21st century. “They developed some fascinating designs, and two students actually earned the opportunity to present their designs publicly with Will,” Legaspi says.

In addition, the Foundation launched a first-ever competitive robotics team at Roosevelt High school, the i.am FIRST Robotics Program.

Customer at a glance

Application
3D modeling/engineering

Hardware
- HP Z820 Workstations
- HP Z420 Workstations
- HP Z Displays

Software
- Dassault Systèmes 3DEXPERIENCE platform with CATIA V6

HP recommends Windows.

"Robotics is one of the best embodiments of STEAM education," Legaspi says. "It's about hands-on, project-based learning, and it combines engineering with coding and design, two of the key areas we want to expose our students to. Robotics is like a varsity sport for the mind."

The i.am.angel Foundation launched i.am FIRST in Boyle Heights with a team of 20 students who designed and built a robot from scratch with help of HP Workstations and Dassault Systèmes software, and competed in the 2014 FIRST robotics competition.

> "None of what we're doing today would be possible without the advanced technology that we've received from supporting companies like HP."
>
> – Enrique Legaspi, teacher, Roosevelt High School

TenEyck not only enabled the Foundation's use of the 3DEXPERIENCE platform, but also helped to teach the design class and served as a mentor for the robotics team. "Mentoring these students was a fantastic experience," he says. "The competition built a lot of enthusiasm for the program. Last year, we had 20 team members for the robotics competition; this year it has more than doubled and will include over 40 students."

The i.am.angel Foundation is particularly glad to see that the design program and robotics team attracted young women to participate more fully in STEAM education. The 16-year-old robotics team captain already won top prizes at two hackathons and dreams of studying at MIT.

"I never imagined I could be building a robot at school," the prize winner says. She hopes to leverage her engineering experiences to apply for an internship at NASA.

Uncovering "diamonds in the rough"

i.am College Track began with 57 students and has grown to 200, with projections of 300 in 2016. Meanwhile, the 3DEXPERIENCE design/engineering class of 15 students is filled, Legaspi says, with "diamonds in the rough."

"You see it in their enthusiasm and their ability to pick up the skills so quickly," he says. The initial design/engineering class proved so successful that the Foundation hopes to add a second, advanced class in coming semesters with more emphasis on 3D surface modeling and 3D printing of student designs.

With growth in the Foundation's i.am STEAM initiative, the i.am.angel Foundation achieves more of its educational goals.

"Computer skills are the new literacy," Legaspi says. "These are the skills that kids need to do their homework and advance to meaningful careers. STEAM is important because it encompasses both technical learning and, at the same time, nourishes creativity. And none of what we're doing today would be possible without the advanced technology that we've received from supporting companies like HP."

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HP Workstations were provided to the i.am.angel Foundation by HP in support of 3D Modeling and STEAM education research and development.

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