Case study

i.am.angel Foundation

Roosevelt High School GIS program on HP Workstations empowers students to prepare for 21st century careers

Industry
Education
Non-profit community foundation

Objective
Provide technology to enable students to learn Geographic Information System mapping using professional tools

Approach
The i.am.angel Foundation has equipped its lab supporting GIS with HP Z Workstations and ArcGIS software

IT matters
• HP Z Workstations are certified to run the most demanding GIS applications, including ESRI ArcGIS

• HP Designjet large format printer provides professional-quality printing of maps

Education matters
• Students learn to run professional GIS software on professional HP Z Workstations

• Students present their results to STEM education leaders and the ESRI user group

> **"By creating one technology ecosystem based on HP technology, we can offer a broad range of challenging, technology-based academic programs."**
>
> – Enrique Legaspi, teacher, Roosevelt High School

Entertainer will.i.am created the i.am.angel Foundation to transform the lives of people in Boyle Heights, east Los Angeles, the neighborhood where he grew up. The Foundation's STEAM initiative (in Science, Technology, Engineering, Arts and Mathematics), offers a program at Roosevelt High School teaching students to use Geographic Information Systems (GIS) software running on HP Z Workstations to analyze neighborhood forces and become a source of change.

Well known for his work with The Black-Eyed Peas, musician and entertainer will.i.am has become a philanthropist focused on giving something back to his childhood neighborhood.

will.i.am remembers the Los Angeles neighborhood where he grew up, Boyle Heights, as 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. He hopes to launch the area's youth on a path that will help them build better lives and successful careers, to foster growth and a healthy future.

Challenging students academically

The i.am.angel Foundation was created specifically 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.

"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. 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."

– Lilly Kam, Director of STEM, i.am.angel Foundation

"i.am College Track is a cornerstone program," explains Tatiana Litvin, Executive Director of the i.am.angel Foundation. "It's Will's vision not only to inspire kids in the community, but 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 future 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."

GIS mapping on professional HP Z Workstations

Through i.am STEAM, the Foundation gives students opportunities that they wouldn't otherwise have. One example: a GIS mapping program using ESRI ArcGIS software running on HP Z Workstations.

In the program's first year, 80 students used ArcGIS through the course of the school year, focusing on ways to transform their Boyle Heights neighborhood through a service project on environmental justice.

"We used GIS to look at brown fields and green space in the community, along with several other aspects," says Enrique Legaspi, a history teacher at Roosevelt High School who champions STEAM learning in all his classes. The students divided up into 12 different groups, each focusing on a single topic.

They developed papers, an exhibit, and presented their findings to hundreds of industry professionals and STEM education advocates, even participating in the 2013 ESRI user conference. Students received valuable mentorship from ESRI staff members including the company's founder and president, and its manager of K-12 education.

"Maps help people understand complex problems and explore possible solutions," says Legaspi. "Using ArcGIS online and community analysis, students in Boyle Heights are learning advanced map skills that will prepare them for important career opportunities."

HP recommends Windows.

Initially, the Foundation had provided a lab equipped with consumer-grade Apple computers to run the software. But since ESRI certifies ArcGIS software to run on HP Z Workstations, the Foundation coordinated with HP for appropriate hardware to support the GIS program.

Soon after, i.am.angel opened a new lab at Roosevelt High School featuring a mix of HP Z820 and Z420 Workstations. They are the same workstations used by professionals to produce complex mapping solutions with ArcGIS.

"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 has for Boyle Heights."

– Enrique Legaspi, teacher, Roosevelt High School

"It is wonderful to have HP, a partner of Esri for near 30 years, provide such quality workstations as the HP Z Workstations to this program. These workstations are not your consumer grade desktops. This commitment by HP shows a real investment on their part to put quality and premium technology in front of these students, providing them capability far beyond most classroom situations," says Dean Garner, Hardware Solution Sales Manager at Esri.

"It's great that we're able to supply our students the tools to ensure they can do powerful mapping and analysis," Legaspi says. "The power of HP Workstations means students can explore their skills at a very high level. They're the best fit for the vision Will has for the neighborhood."

"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

Today's students are more accustomed to consumer tablets and smart phones as their primary technology, Legaspi notes. "HP Workstations provide a whole different level of experience—a more professional experience—than these mobile devices. Students are able to see, to do and imagine so much more."

Learning through collaboration

Legaspi indicates that the workstations facilitated both individual and collaborative projects. Many of the students would routinely come to school early in order to get extra time to work on the HP Workstations and their GIS projects.

HP recommends Windows.

Customer at a glance

Application
GIS

Hardware
• HP Z820 Workstations
• HP Z420 Workstations
• HP Designjet T920 postscript ePrinter
• HP Z Displays

Software
• ESRI ArcGIS

Collaboration 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."

In addition to the GIS program, HP Z Workstations also support two other i.am STEAM initiatives: a 3D design and engineering program using Dassault Systèmes 3DEXPERIENCE platform, and a robotics program where students design and build a robot to participate in the international FIRST robotics competition.

"We're very fortunate that the same HP Z Workstations we use for GIS also offer the power to run professional software in other engineering disciplines," Legaspi says. "By creating one technology ecosystem based on HP technology, we can offer a broad range of challenging, technology-based academic programs."

Equipping students with "the new literacy"

The i.am.angel Foundation must be doing something right. Its i.am College Track program began with just 30 students and has grown to 200, with projections of 300 students participating in 2016. Meanwhile, the new computer lab at Roosevelt High School 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. Based on its success in challenging students to produce significant outcomes, the GIS program was repeated for a second year, focusing on health and wellness in the community.

Through its i.am STEAM initiative, the i.am. angel Foundation achieves more of its educational goals every day.

> "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

"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 we've received from supporting companies like HP."

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