Engineer Interview

"My job requires me to be very flexible, and I enjoy the new challenges and excitement that come with every day."

Ryan Hunt is an engineer working on projects surrounding renewable energy and sustainable housing construction and materials. Find out more about what he has to say about being an engineer in the "Day in the Life" interview below.

Ryan Hunt, Engineer: R&D Projects and Shop Manager
Hunt Utilities Group, LLC

Describe a typical day at your job?

Generally, I come in at about 9 a.m. and first respond to communications I've received: e-mails, calls, etc. I talk over the "project of the day" with my team and review what we're going to do. Half of the time is spent at my desk doing calculations and web research to see what's available to put into our projects. The other half of my time is spent in the shop making it (the project) happen or in the field installing our work.

I usually work 9 a.m. to 5 p.m., but sometimes need to work later to meet deadlines.

I work with a team of three to four people in the shop, but on the entire campus, there are about 20-30 people within the three organizations.

How did you get started working in this field?

I was working with the founders at their previous company, and I followed them as they started this company. We were originally working on water recycling and reprocessing, and began to think that we should be working on projects for our own neighborhoods first before trying to solve problems across the globe. That got us looking into how buildings are built, and trying to solve the question of how to build them better. I've been working in the field eight to nine years.

Before working in this field, I worked in the metering field, helping to design the computer systems that help read energy use.

What sort of training or education do you have?

I have an undergraduate degree in chemistry and chemical engineering from the University of Minnesota in Minneapolis, and I learned a lot of computer programming on the job at my last job.
I took a little break to get into the biodiesel business for a couple years, learned a heck of a lot, but it didn't get to the point where it could support me, so I came back here. Doing that, I used a lot of the chemistry and chemical engineering that I'd actually gone to school for, so I didn't need much additional training to enter that field.

I attend a lot of building conferences and workshops. There's an energy design conference in Duluth I've attended several times. It's really a lot of web research. If you have a question about materials, you spend a lot of time on the web learning about it and related topics, even if you never end up using it. The learning curve never stops.

Describe your work environment.

My office is in the corner of a 6,000 sq foot prototyping lab and fabricating facility. It has metal-working tools, plastic-working tools, parts of all sorts for electrical and plumbing work, and overhead cranes. Usually when there's a lot of noise, I'm working in the shop in the middle of it, and I do more of my desk-work when it's quieter.

I'm either at my desk, in the shop, or sometimes out in the field — building homes that help heat and cool themselves, recycle water, and provide a spot to grow food. When we're building, I'm out there trying to figure out which piece comes next.

What sort of tools, machines, or equipment do you use regularly?

My cell phone is probably my most important "tool" because I deal with a lot of communication and a lot of e-mail. The computer is probably the second most important tool because I use it for e-mailing and web research. Beyond that, the other tools are: metalworking tools, welder, grinder, sheer, plasma XY table (plasma cutting table), and a bender.

I learned how to use these things over the past few years because I brought in people who know how to use the equipment, and watch them work.

I use a spreadsheet program a lot to do my calculations; it's one of our best friends here. To do this job, you need to be familiar with and understand the fundamentals of the materials we use and what they will react with, because innovation is about the materials.

What skills or personal qualities are good for this job?

I've noticed that there are some people who are happy with a lot of predictability; they like to know what they'll be doing on a day-to-day basis. People like that might not do so well on the job. It is a different challenge because everyday something else pops up. This point in our civilization, the recognition of where the planet's going; that helps me do my job very well.

An ability to communicate well — to be able to offer tours, do interviews and explain what we're doing here and why, in the long-run, it's easier on the planet.

Does your job involve working on energy efficiency or conservation?

I'm more directly in the green industry than a lot of other people who call themselves "green". We're on a 60-acre resilient living campus. Working on food, water, and shelter in one package, to reduce the footprint each of us will leave on the earth. What I consider to be a green industry is using any of the
normal skills, and putting them to a use that will help humanity live for generations more sustainably in a way the planet can support.

**Have you been green from the start?**

There's all sorts of greenwashing. I'm confident that we aren't greenwashing. We haven't just tweaked an ingredient, or whatnot.

**Was that important for you as you were transitioning out of meter field?**

I resisted the change at first because I was well-engaged with a lot of good challenges. And it could be spun to be green work, as a metering system that helps people figure out what they are actually using. Here, it's a lot more earthy with our hands in the dirt gardening and applying mud to bale walls.

**What do you enjoy most about your job?**

The people and challenges. It really does feel good being able to explain what I'm doing to people, and have them be excited about it. I like being able to get the feedback and validation that comes with sharing our message.

**What changes in this field do you expect to see in the future?**

On our research campus here there is a non-profit side (Happy Dancing Turtle) whose mission it is to promote sustainable living, while the for-profit side's (Hunt Utilities Group, LLC) job is to harness the engines of capitalism to make products and get the products out to people to live more sustainably. When the non-profit started, there was nothing really going on in this area. The word "green" wasn't really used. There's been a lot of change in that. Now, "reduce-reuse-recycle" is not new or pushing the edge, which is great. There's been a real tipping point with global warming and now more and more people are concerned. Even if the science is debatable by some, just ask the polar bears.

**Are there any common misconceptions about this type of work?**

I'm sure there are. A lot of people probably think we're nuts or doing something really out there (that we're actually not). We're in a long research-cycle now, and we're not a real profitable business, so that might be one misconception.

Maybe another one is that we're all hippy-beatniks.

**What is your advice to someone interested in this field?**

Hang around. Hang around places that are doing the types of things you want to do. If you want to be a millionaire, hang out with other millionaires. The best way to be green or to work in a green industry is to hang around the green industry. Just volunteering, knocking on the door, learning what's new, attending conferences, and networking.

As this industry progresses, we just need the typical, hard-working people who get things done. Executives down to the shop guys, people who know how to get things done are going to be called on to get these things done. Anyone can be green in their industry if they're working on a project that is sustainable in the long run.
One of my favorite catchphrases is "Decadent Sustainability." If we're building a new green future, don't think hobbit houses. Think nice, comfortable — high performance, but low-impact. You don't have to minimize the square footage of a house, but the house needs to be low-impact.