

# Helping to Shape the World

*Mankato green designer Eric Lennartson's love for building and design began with a set of LEGOs.*

All of us can recall the joy we had as children with a bucket of building blocks, stacking colorful creations into looming towers or elaborate castles. Imagine taking that love of design a few steps further and developing a plan for a building that will last for decades and use energy and materials that are sustainable.

That tall environmental order is being placed on the shoulders of a new generation of green design architects like Eric Lennartson.

Lennartson, designer and marketing coordinator for Paulsen Architects of Mankato, has traveled a long road in his pursuit of an architectural career.

"I've been interested in architecture since I first played with LEGOs as a kid. I would probably take a job with LEGO in Denmark designing their little kits," he said with a laugh.

Like the evolution of LEGOs from the early renditions – simple, bright plastic blocks – to their current, more intricate building sets replicating the latest "Star Wars" movie, the field of architecture has become more complicated in recent years.

Environmental concerns about the materials used in construction and economic factors like the rising cost of energy have found many corporations, government agencies and homeowners seeking architectural design that is eco-friendly.



PHOTO COURTESY PAULSEN ARCHITECTS

*Eric Lennartson is part of a new generation of architects that is using green principles in building design.*

## What Architects Do

The responsibilities of an architect typically include the following:

- 4 Prepares information about designs, structure specifications, materials, colors, equipment, estimated costs and construction times.
- 4 Prepares scale drawings.
- 4 Plans layout of projects.
- 4 Integrates engineering elements into unified designs.
- 4 Consults with clients to determine functional and spatial requirements of structures.
- 4 Directs activities of workers engaged in preparing drawings and specification documents.
- 4 Periodically observes work during construction to monitor compliance with plans.
- 4 Prepares operating and maintenance manuals, studies and reports.
- 4 Administers construction contracts.
- 4 Represents clients in obtaining bids and awarding construction contracts.
- 4 Prepares contract documents for building contractors.

*Source: Occupational Employment Statistics Program, Department of Employment and Economic Development. 17-1011 Architects, Except Landscape and Naval, Detailed Occupation Data [www.deed.state.mn.us/lmi/tools/projections/detail.asp?code=171011&geog=2701000000Minnesota](http://www.deed.state.mn.us/lmi/tools/projections/detail.asp?code=171011&geog=2701000000Minnesota)*

### Job Vacancies for Architects and All Occupations in Minnesota Fourth Quarter 2007

OCCUPATION	Number of Job Vacancies	Job Vacancy Rate	Part Time	Temporary or Seasonal	Requiring Certificate or License	Median Wage Offer
Architects	41	2.3%	0%	0%	63%	\$26.44
Total Job Vacancies	50,594	1.9%	37%	12%	27%	\$11.00

Source: Minnesota Job Vacancy Survey, Fourth Quarter 2007

## The Work

Lennartson started working at a large architectural firm while still in school and was hired full time when he graduated. After 12 years with the firm, he had learned a lot about the business and marketing aspects of the job, but he wanted to get closer to the design phase of the work.

He eventually joined Paulsen Architects, a firm with fewer employees, because he wanted to participate in all aspects of a project. "I wanted a smaller firm experience," Lennartson explained. "In a larger firm you could be limited to doing one thing more frequently. I wanted to design buildings."

Lennartson's work is a mix of client-focused planning projects and company-directed marketing work, so a typical day is hard to describe.

"It changes almost week by week," he said. "Sometimes I have a rush of marketing activities that will take priority over projects. Tomorrow I'm probably going to have a client meeting where I meet with clients and go over design and get feedback from them."

"Right now I'm working on proposals for new work for 2009-2010 construction," he added. "And we're

updating the company Web site, so I'm working with the project designers on getting that information ready."

Marketing is still an important part of Lennartson's work at Paulsen Architects, as it is at all architectural companies.

"We have to be able to present in order to get the project," he explained. "We have to create renderings or colored plans, sometimes make public presentations about specifically larger buildings. We have to communicate this visually, so I help in preparing written documents or visual presentations and boards for those meetings."

These presentations must be ready for a variety of clients and projects, including housing, schools, government facilities and corporate buildings. Not only does Lennartson enjoy the variety of his work, he loves the opportunity to work with creative people.

"I like that I'm in a creative profession, and that my job isn't the same every day," he said. "The buildings change as well as our projects."

Paulsen Architects has a diversity of expertise among its staff, including architects who specialize in medical projects, churches and retail spaces.

To foster a collaborative environment, Paulsen Architects' interior office has an innovative and flexible design that includes moveable walls, offices without doors and as much natural light as possible

Despite the slowdown in the housing market, Lennartson said, Paulsen Architects remains busy year-round and is actually growing at a time when other architectural firms are struggling.

"Work can have its intense periods where there's a lot to do in very little time," he said. "We are actually working really hard in winter so that our drawings are ready for spring construction. And then there are interior projects. We're pretty busy all year."

## Working Green

Although the field of architecture has been focused on sustainable design for some time, recent concerns about global warming, depleted resources and energy costs have put architects on the front lines of the debate about energy efficiency and renewable materials.

"There are huge implications with the building industry when you look at waste," Lennartson said. "What buildings use and consume in energy – it's pretty huge. Build-

ings account for something like 6 percent of the energy that the world consumes and 40 percent of U.S. energy consumption.”

Through a mix of modern technologies that create building models – Building Information Modeling (or BIM) and computer-aided design and drafting (CADD) – and ancient concepts of heating and cooling, architects plan structures that meet contemporary needs.

“The funny thing is that these techniques have been done for millennia,” Lennartson said. “Natural light, natural ventilation. At a certain point, we decided to close our buildings up as tight as can be and control them with machines.”

The Blue Earth County Justice Center in southern Minnesota, as designed by Paulsen Architects, is one example of blending traditional and modern design. The existing courthouse, a 120-year-old historical landmark that received the U.S. Environmental Protection Agency’s



RENDERING COURTESY PAULSEN ARCHITECTS

*The Blue Earth County Justice Center in Mankato blends traditional and modern design, including sustainable features that will reduce building operating costs.*

Energy Star rating, is being replaced by a new building containing green features such as low-emissivity glass windows, rain gardens in the parking areas, prairie restoration of surrounding landscape, use of local limestone and recycled materials, and geothermal heating and cooling.

Lennartson said geothermal heating

involves drilling deep into the earth to take advantage of the consistent temperatures found underground. These underground heat wells can then be tapped to pull or dump heat, depending on the time of year.

Even seemingly modern-looking building design can incorporate green principles, he said.

### Employment Projections, Architects

GEOGRAPHIC AREA	Estimated Employment 2006	Projected Employment 2016	Percent Change 2006 – 2016	Numeric Change 2006 – 2016	2006 - 2016 Replacement Openings	2006 - 2016 Total Openings
U.S.	131,873	155,258	17.7%	23,385	24,903	48,288
Minnesota	2,177	2,521	15.8%	344	410	754
Seven-County Twin Cities area*	1,569	1,894	20.7%	325	180	505
Central Minnesota*	87	102	17.2%	15	10	87
Northwest Minnesota*	121	158	30.6%	37	10	47
Southeast Minnesota*	74	85	14.9%	11	10	21
Southwest Minnesota*	61	62	1.6%	1	10	11
Northeast Minnesota*	135	158	17.0%	23	20	43

\*Note: Regional estimates are for 2004–2014, state and national estimates are for 2006–2016

Source: Occupational Employment Statistics Program, 2008 wages

### Architecture Licensing and Certification

SOURCE on Licensing	Geographic Area
The American Institute of Architects: <a href="http://www.aia.org/ep_home_getlicensed">www.aia.org/ep_home_getlicensed</a>	National
National Council of Architectural Registration Boards: <a href="http://www.ncarb.org/">www.ncarb.org/</a>	National
Follow the ISEEK weblink to learn about the 18 additional certifications that architects may pursue: <a href="http://www.iseek.org/sv/Careers?id=12220:171011">www.iseek.org/sv/Careers?id=12220:171011</a>	National
For information on licensing for architects in the state of Minnesota, follow the ISEEK weblink with contact information: <a href="http://www.iseek.org/sv/Careers?id=13030:100011">www.iseek.org/sv/Careers?id=13030:100011</a>	Minnesota
LEED (Leadership in Energy and Environmental Design), an additional credential that many architects are pursuing, is managed by the nonprofit U. S. Green Building Council. The goal is to create high performance green buildings. <a href="http://www.usgbc.org">www.usgbc.org</a>	National

“Some of the high-tech buildings look very new, very modern, metal and glass, but that’s only the surface,” Lennartson said. “Inside, they feature efficient lighting on a sensor, rather than on a switch, that adjusts with the level of available natural light. These types of sensors are in The New York Times building. Lights closest to the windows aren’t even on and only appear the further you go inside the building.”

Energy costs are a big part of this push for efficient systems. Lennartson said that drawing up a lifecycle cost analysis for a building, which shows a client how much money will be saved by implementing such efficient systems, is a tool many architects use when they want to underscore the importance of investing in green technologies.

To read more about the green practices used by architects, visit the American Institute of Architects Sustainability Resource Center at [www.aia.org/walkthewalk/](http://www.aia.org/walkthewalk/).

### Education and Training

Lennartson believes that the extensive training and education involved in architecture is one reason that there is a projected shortage of architects.

Although Lennartson received a bachelor’s degree in art from Gustavus Adolphus College in St. Peter, he took many physics and mathematics classes and spent summers working the construction side of the business, including at a lumberyard, with a landscape designer, and at the window company where his father worked.

Lennartson eventually enrolled in architecture school at the University of Minnesota, where he earned his Master of Architecture degree. The university is the only school in the state with an accredited program. After completing a four-year degree, most prospective architects are looking at between five and six more years of school in an accredited architecture program.

“The schools are competitive,” Lennartson said. “You frequently will not get in the first year you apply.”

Moreover, the attrition rate is high. In his graduate class of 100 students, only 20 remained at the end.

“You know the design shows on the Bravo channel?” Lennartson said. “They kind of get tough on critiques, just like that. And there are long hours. It can be kind of crazy. You’ll get impossible assignments.”

After completing an architecture program and securing a job, a prospective architect must embark on the path to licensure, which can take years. Lennartson is still working toward getting his license. He had to have three years of experience before he could spend two years pulling together the paperwork to apply for the exam. Lennartson dryly calls the effort a “long process.”

### Compensation and Rewards

Depending on the phase of their licensure and education, the size of their firm or the nature of their projects, architects may be salaried or paid hourly. Lennartson is paid hourly, with overtime pay when projects demand it. He also receives paid time off, health benefits and a 401(k) retirement plan from

Paulsen Architects, as well as all of his educational and licensure costs. The 20 percent of architects who are self-employed must cover health insurance and retirement plan costs themselves.

Lennartson cites other important perks of his work. "I have a flexible work schedule, and I get to be with a bunch of creative people who are fun to work with."

### Employment Prospects

According to a Bureau of Labor Statistics report, by 2016 there will be a projected 18 percent more architects than currently work in the field. Growing need for architectural services, including LEED-certified architects who can design green buildings that save on energy costs, will contribute to increased demand in coming years. (For the full report on the architectural profession, go to [www.bls.gov/oco/ocos038.htm](http://www.bls.gov/oco/ocos038.htm) .)

Although schooling and licensing can take many years, the long process makes sense when one considers the impact of the work.

"For anyone looking for a chance at shaping the world around them," Lennartson said, "this career would be for them. Everything from the detail of city planning to someone's little addition. We are changing and affecting how people live."

Lennartson believes that the rigorous, competitive nature of architecture school may have a hand in the worldwide shortage of architects. He also feels there is much growth potential for this work worldwide. A long view as well as patience with the process is Lennartson's main advice for those considering the field.

### How Much Do Architects Earn?

GEOGRAPHIC AREA	Wages		
	25th Percentile	Median	75th Percentile
U.S.	\$25.84	\$33.58	\$43.88
Minnesota	\$27.55	\$35.14	\$45.19
Seven-County Twin Cities area	\$27.99	\$35.67	\$45.44
Central Minnesota	\$26.30	\$41.00	\$49.46
Northwest Minnesota	\$23.72	\$31.53	\$37.32
Southeast Minnesota	\$28.08	\$35.54	\$42.59
Southwest Minnesota	-	-	-
Northeast Minnesota	\$25.73	\$31.70	\$68.01

Source: Occupational Employment Statistics Program, 2008 wages



PHOTO COURTESY PAULSEN ARCHITECTS

*A former Kmart store in Austin was redesigned by Paulsen Architects into the popular SPAM Museum. The project was featured in a book by Julia Christensen called "Big Box Reuse."*

"Many designers do not hit their prime until later in life," he said. "Working for other designers is great experience, but to be the lead designer can take 20 years. The biggest names in architecture break into the design world in their 40s and hit their prime in their 50s or 60s. That doesn't mean you can't

do great work in your 20s or 30s, but you may have to run your own design firm to do it. Ralph Rapson [who designed the original Guthrie Theater in Minneapolis] worked well into his 90s before he died last year." 4