



Aztech Locknut

ENVIRONMENTAL GUIDE



WELCOME TO AZTECH LOCKNUT COMPANY. **WE STARTED OPERATIONS IN 1978** AND HAVE BEEN IN THIS LOCATION SINCE 1998. AZTECH IS A BRAND NAME IMPORTER AND MANUFACTURER OF LOCKNUTS, A SPECIALIZED CLASS 3 INDUSTRIAL FASTENER.

In 2008, Aztech embarked on a project to convert our conventional building into a **LEED-EB certified building**. Currently all the LEED-EB Gold requirements have been installed and are functional in the building while we complete the required 12 month monitoring & documentation of the LEED points. This tour will walk you through the various operational areas of the company showing you how our business works while highlighting the **42 environmental attributes** of the building that are not typically found in this type of industrial facility. You will see that the company has been through some effort and expense to install and operate these special features. The reason for this is fourfold, 1) employee comfort and satisfaction, 2) increased business opportunities, 3) savings from lower utility and maintenance costs and 4) increased property value. All four of these justifications for the effort have been realized to the extent projected at the development stage of the transformation.



www.aztechlocknut.com



ATTRIBUTE DESCRIPTIONS

#	SIGN DESCRIPTION	SIGN DETAIL
1	High Ratio Natural Areas	Designed by Karl Heitman and built on an attractive 9 acre site the Aztech campus provides for generous green spaces. The building, drives and parking cover about two acres, leaving nearly 7 acres for greenspace. Each year, a percentage of land area is returned to native plantings.
2	No Mow Native Area	Our No Mow, irrigation, fertilizer and pesticide free areas provide an attractive habitat for a variety of birds, insects small animals and people!
3	No Smoking on Site	Aztech is a smoke free area. Smoking is allowed only on personal property, (cars) or off the property.
4	Bike Rack	A bike rack encourages regular visitors to the building to burn food fuel for transportation. A shower inside dedicated to bikers assures that a strenuous peddle can be washed off before work starts.
5	Hybrid Company Car	The Aztech company car is a Ford Hybrid. The full feature car gets exceptional milage by utilizing state of the art technology and performance displays that challenge the driver to reduce consumption. 2010 fuel cost – 8¢/mi.
10	Aztech Environmental Policy	Aztech has made a serious commitment to environmental responsibility as summarized in our Policy Statement. Although we have accomplished a great deal toward this goal, the process is one of continuous improvement and there are dozens of independent projects to move forward.
11	ISO 14001 Certificate	We have been achieved the International Standards Organization 14001 Certification for our Environmental Management System.
12	LEED-EB Certification	The company's work in all areas of our building and operations qualifies us for LEED-EB Gold Certification. Currently in the performance phase of the certification process, all equipment and monitoring installations are complete and work to complete the significant documentation is ongoing.
13	Triple Pane Windows	Working with a local window contractor a third pane of glass has been engineered and installed in all the offices and lobby curtain wall frame systems. The spacing of the new installation assured the very best thermal performance and improved the comfort of the office spaces dramatically.
20	Energy Use Monitoring	At three strategic locations around the building, energy monitoring systems are installed to pick up electrical use, as well as hot water and the usable output from our solar hot water system. Much more than a simple electric meter, the HOBBO monitoring system reads the energy used to charge forklifts, compress air, demand for our HVAC system, exterior lighting and so on. The raw data is uploaded wirelessly to a third party site for processing. Then we bring the data into our custom program for the building and organize it into meaningful spreadsheets or charts that ultimately breaks down our cost to power each significant demand in the building...every day! For example, we noticed demand use for our air compressors started to show up on the weekends. We were able to reset the compressor timer back to the weekdays only and avoid the waste that was occurring.
21	Solar Hot Water Tool Washing	Our tooling washer runs once a day and requires 140 degree water to break down the grime. After cooling down between cycles, it would normally require a huge gas burner running for 15 minutes to get the water solution up to temperature, unless you rely on the sun! The rooftop solar hot water collectors help maintain the solution around 160 degrees in the round insulated tank. Before running the washer, the hot cleaning solution is relocated to the washer tank and the cleaning begins. after the wash, the still warm solution is relocated back to the tank to be further charged by the sun.
30	Eco-Friendly Solvents	Among the green solutions we have incorporated in the building are organic hydraulic oil and cutting fluids.
31	Efficient Production Systems	The production lot size dynamic has changed dramatically for the company over the years. Once heavily reliant on a handful of very high volume parts, we have had to transform into small lot specialists. Quick Change Tooling systems, First Part Good set-up processes, Multi-Point Process Monitoring, Automatic Torque Test Machines, automated material handling call up, a one stop tool room set-up & return tooling cart system and like part production sequencing have been developed and are constantly refined. The constant goal is to move from one production lot to the next with minimal down time and start running perfect parts at high speed right away. Efficient production saves energy!

#	SIGN DESCRIPTION	SIGN DETAIL
32	Sound Enclosures	Our custom sound enclosures provide easy access to the feed systems and a reasonably quiet work environment.
33	Daylight & Views	Originally, the building did not have windows available for warehouse and production workers. Among the best of the LEED requirements is for "Daylight & Views". So we did a little design & engineering and then got the concrete contractor out to cut large blocks out of the walls for our custom windows. All but a few workstations in the building now support the demanding LEED requirement for "Daylight & Views".
34	Water Recovery System	After cleaning the warehouse floor, the scrubber waste tank is discharged into a custom designed settling and filtering tank. After processing, the filtered water is safe to discharge into the drain, ultimately the pond. The small amount of dry solid is tossed into the trash.
40	Production Heat Recovery	During the winter, heat generated from our hydraulic equipment and air compressor is delivered to the large ceiling radiator. During the average winter production day, about one third of the warehouse heat demand is satisfied by utilizing this otherwise waste heat.
41	Solar Hot Water Heat	Once the washer tank is satisfied and the hot water for the offices is warmed up, if it is cold outside the solar hot water is used to heat the warehouse.
42	Motion Sensor Lighting	Einstines energy rule, the most efficient light is a light that is off, is at work throughout the warehouse. As operators move throughout the warehouse, individual sensors on each light detect the movement and fire the light. Once out of the sensors eye, the light goes out after a few minutes.
43	Spill Control Stations	Located in several areas near the hazard areas are spill stations that have the tools and protective wear to manage any conceivable mishap.
44	Dynamic Recycling	We try very hard not to throw anything away in the trash. Established recycling systems and receptacles exist for steel, wood, plastic cardboard, office paper and oil. Special recycling is done when needed and has included computers, ductwork, rocks, motors, lead, fluorescent bulbs, batteries, HVAC units, lumber, electronics, refrigerants, light fixtures, coolant and many others!
45	Minimal Landfill Waste	Our single dumpster is picked up once a week. Most of the disposal consists of floor sweepings, packing material and food related waste.
50	Shower for Bikers	Our handy private little shower room is just the ticket after a fast paced morning ride!
51	Employee Home Recycling Center	In the Employee Resource Center we have staged containers for waste batteries and compact fluorescent bulbs and encourage our staff to bring these nuisance items to work for common responsible recycling.
60	Warehouse Light Tubes	Our most active section of the warehouse receives the vast majority of light from the 24 solar light tubes mounted in the roof. About 80% of warehouse operator hours are spent in this area, usually with no lights burning at all!
61	Daylight Controlled Lighting	Sistered up with the light tubes are extremely efficient Orion T5 fluorescent fixtures. A sensor on one light tube inputs the amount of sunlight entering the building to the control panel. The control processes the input and sends a wireless signal to each fixture telling it to operate at 0%, 50% or 100% output.
62	Geothermal Pond Loop	Fortunately, our retention pond was engineered to be a minimum of 13 feet deep, so it creates nearly perfect conditions for geothermal transfer year round. A steel sled loaded with coils of plastic tubing , 20' long, 10' wide and 4' high is sunk in the center of the pond near the building. In the corner the piping enters the building and is consolidated. Small efficient pumps circulate water between the Mitsubishi heat pumps and the pond, in the summer drawing cooling from the pond and in the winter drawing heat.
63	Pond Source Lawn Irrigation	Our pond is also the water source for the limited lawn irrigation during the hottest parts of the summer. The pump is hidden under the artificial "rock".
64	All Electric Car Sponsor	When gas hit \$4.50 a gallon in 2008, Mike, our process engineer had enough and with the help of a donated VW and the sponsorship of Aztech Locknut, set out to make an all electric car. The result is this completely road worthy transport that goes 40 miles at 40 MPH between charges – zero gas, zero emissions!

#	SIGN DESCRIPTION	SIGN DETAIL
70	City Multi Heating and Cooling	Manufactured by Mitsubushi, the city multi system is a heating & cooling heat pump. The four units conveniently placed in the comfort of our warehouse replaced seven rooftop HVAC units. Maintenance cost went from nearly a thousand dollars per month and rising to virtually zero. What makes the system unique is the extreme efficiency, infinitely variable output and the ability to simultaneously transfer energy from spaces calling for heat to spaces calling for cooling and visa versa. To get the efficiency off the charts, we added the geothermal loop in the pond!
71	Lossnay Heat Recovery Ventilation	The City-Multi system does not provide for fresh air. Ventilation is supplied to the building through five large Lossnay heat recovery ventilation systems. These units are cycled by the master control and recover nearly 95% of the temperature of the outbound conditioned air while bringing in fresh air in every season.
80	Occupancy Sensors Lighting	Each of the seven rest rooms, eleven private offices, conference room, closets, computer room and several hallways have motion controls for lighting. The most efficient light is a light turned off!
81	Individual Temperature Control	Every space has it's own temperature control. This includes common areas as well as individual rooms and offices. There is a single master control that assures the most efficient overnight and weekend settings and brings areas up to comfort levels in a sequence that does not overload the delicately balanced system.
82	4-Day Work Week	Where possible, employees enjoy a four day work week. This is more practical in a healthy bright comfortable environment with lots of fresh air. There is plenty of energy to operate at peak performance during those extra hours.
90	Low Flow Toilets and Sinks	Original to the building are advanced technology and automated water controls for all the rest rooms. These systems not only save water, but eliminate the transfer of germs from the handles on manual controls.
91	Automatic Restroom Fans	The transformers for the sink controls and the ventilation fan are controlled by motion detection switches so there is no energy draw when a restroom is not occupied.
92	Solar Heated Hot Water	Mounted on the roof are three large evacuated tube hot water panels capable of producing 180 degree water on a sunny summer or winter day. Some of the heat is cycled to a hot water tank in the ceiling that services the offices.
93	Eco-Friendly Cleaning	All the cleaning products used in the offices, warehouse and production areas are certified green.
100	Triple Insulated Roofing	In addition to the original 2" fiber roofing insulation, a 1" radiant barrier sandwich is overlaid by another 2" of roof insulation and finally covered with a white reflective membrane that reduces the site "hot spot" signature. Additional foam insulation in the plenum areas above the offices assures the building shell is tight and thermally efficient.
101	Sales Office Light Tubes	These light tubes are among the best performing available. A reflector dome on top focuses sunlight in at low latitudes and reflects light away at high latitudes. The resulting balanced sunlight is reflected down the mirror of the tube and diffused into the space.
102	Variable Sales Office Fixtures	The already highly efficient florescent fixtures have infinitely variable output, so as light diminishes from the sun, they increase their output to maintain a consistent light level for the workspace.
103	Paperless Office Systems	Every department has developed approaches to getting work done accurately and efficiently, while minimizing the use of paper. In sales, inbound & outbound faxes are converted to e-mail. Correspondences and documents are stored electronically. Throughout the company, wide screen monitors allow two documents to be displayed side by side allowing for quick comparisons and cut & paste to minimize data entry errors.

SIGN PLACEMENT KEY

	1. Entrance		8. Warehouse
	2. Reception Area		9. Employee Resource Center
	3. Machine Shop		10. Warehouse
	4. Production Area		11. Warehouse
	5. Production Area		12. Kitchen
	6. Warehouse		13. Restroom Facility
	7. Dock		14. Sales

SAFETY

FOR ANY EMERGENCY SUCH AS FIRE, EXPLOSION, CHEMICAL SPILL, OR MEDICAL EMERGENCY, CALL THE EMERGENCY TELEPHONE NUMBER AT **911 ON ANY AZTECH INTERNAL PHONE.**

For non-emergencies, locate an Aztech department manager to report the incident.

VISITORS

Aztech is committed to providing visitors and contractors with a healthy and safe environment.

The responsibilities of visitors include:

- All visitors to the building must be guided by an Aztech employee when leaving the lobby;
- Complying with occupational health and safety instructions, policies and procedures;
- Complying with the instructions given by emergency response personnel such as emergency wardens and first aiders; and
- Not willfully or recklessly endangering the health and safety of any person;
- Not removing or damaging company property.

CONTRACTORS

The AZTECH REPRESENTATIVE is the primary contact between Aztech and contractor employees. This person may be an Aztech employee or an on-site representative of a contractor company designated by Aztech. Contractors must ensure they understand who the Aztech Representative is for their project. As part of Aztech's commitment to health, safety and the environment, Aztech requires that all work performed at or for Aztech by contractor firms and their employees comply with all applicable requirements.

Applicable Requirements are:

- Any federal, state, county, or municipal law, regulation, ordinance or code;
- Ensuring that they and their employees read this complete company specific contractor requirement;
- Ensuring that a comprehensive job safety analysis is completed by the contractor before work commences;
- Ensure that a system is in place to protect and/or minimize the environmental impact of the contractor's activities;
- Using equipment and materials that are safe and used in a manner that does not pose a risk to the themselves or to Aztech employees and visitors;
- Ensuring the use of safe work methods; and
- Have statutory compensation and liability insurance.

Where there is a conflict between applicable requirements, the one most protective of health, safety and the environment applies. It is the contractor's responsibility to ensure that these requirements are met. Questions concerning safety and health requirements should be directed to the contractor supervisor who can then discuss them with the Aztech Representative as necessary.



AS 9100
9001:2008
14001:2004

