THE AVIATOR **DEVELOPMENT PLAN AND** FINAL DEVELOPMENT PLAN

GREEN BUILDING



Green building is the practice of increasing the efficiency with which buildings and their sites use and harvest energy, water, and building materials. The concept is to reduce the traditional building impacts on human health and the environment, through better design, construction, and planning of the buildings useful life cycle.

The overall recycling rate in the steel industry is over 75%, the highest of any industry in the country. And there's typically only 2% waste in steel construction, versus 20% waste found with wood construction. EcoSteel's high-performance, sustainable buildings are developed to reach the highest environmental quality standards.

EcoSteel Building Systems provides Green Building solution for projects that are seeking LEED certification or are governed by stringent energy code requirements. Energy codes are designed to set minimum standards for design and construction and can significantly reduce building system life-cycle costs while serving as a positive driver for adoption of

energy-efficient building technologies. In 2004, all states were required by a U.S. Department of Energy (DoE) ruling to establish a commercial energy code that is at least as stringent as ASHRAE/IESNA Standard 90.1-1999. EcoSteel offers construction solutions that provide superior thermal efficiency with a virtually maintenance free life cycle.

EcoSteel provides the perfect combination for projects that have integrated Wind or Solar energy applications.

With 13 Manufacturing points in the U.S., we minimize transportation fuel used. Local supply locations and recycled content receive added credit for projects that are seeking LEED certification.

EcoSteel is a member of the USGBC and a leading force in pre-engineered energy-efficient building technologies.

LEED Information

Buildings annually consume more than 30% of the total energy and more than 60% of the electricity used in the U.S. Each day, five billion gallons of potable water is used solely to flush toilets. A typical North American commercial construction project generates up to 2.5 pounds of solid waste per square foot of completed floor space. The far reaching influence of the built environment necessitates action to reduce its impact. The following information illustrates how the Aviator project utilizing the EcoSteel system will substantially reduce negative environmental impacts as well as enhance building marketability.



The purpose of this document is to outline the 27 credits the Aviator project qualifies for at this moment utilizing a steel frame and insulated metal architectural panels for the dried in shell. As referenced below, there are a total of 69 possible points to be obtained and as more systems are implemented into the building (i.e. solar/wind power, energy efficient HVAC systems, renewable materials for interior finishes, innovative wastewater technologies, light pollution reduction, stormwater design, other alternative transportation methods, landscape development, etc) this structure will easily qualify for a minimum Gold certification.

Leadership in Energy and Environmental Design (LEED), the following ratings are awarded by the USGBC (US Green Building Council) for LEED certification:

Certified	26-32 points
Silver	33-38 points
Gold	39-51 points
Platinum	52-69 points

Each item is worth one point unless otherwise specified:

Site Selection:

Do not develop buildings, hardscape, roads or parking areas on portions of sites that meet any if following criteria: Prime farmland, previously undeveloped land whose elevation is lower than 5 feet above elevation of the 100 year flood as defined by FEMA, land identified as habitat for any species on endangered list, within 100 feet of any wetlands, within 50 feet of a water body, land that was public parkland.

Considerations: See #3

Will use roofing materials having a Solar Reflectance Index (SRI) equal to or greater than an SRI of 78 for a minimum of 75% of the roof surface(Ecosteel Roof panels have a minimum of a 90 SRI)

Considerations: The heat island effect raises he localized temperature, impacting local microclimate. Heat island exacerbate air pollution for two reasons; 1. smog is produced faster at higher temperatures. 2. Rising temperatures lead to increased cooling requirements, requiring energy and causing associated emissions.

Whole Building Energy Simulation (1-10 points): Demonstrate a percentage improvement in the proposed building performance rating compared to the baseline building performance rating per ASHRAE standard 90.1-2004. The minimum energy cost savings percentage for each point threshold is as follows: 10.5%=1 point, 14%=2, 17.5%=3, 21%=4, 24.5%=5, 28%=6, 31.5%=7, 35%=8, 38.5%=9, 42%=10. Utilizing Ecosteel insulated wall and roof panels for dried in shell will provide a minimum of the 42% building performance rating allowing for qualification of all 10 credits.

Considerations: Commercial and residential buildings consume approximately 2/3 of the electricity and 1/3 of all energy in the U.S. Energy efficient buildings limit the harmful environmental side effects of energy generation, distribution and consumption.

Considerations: The lifetime of many buildings is greater than 50 years. Even minor energy savings are significant when considered in aggregate. The cost and environmental impacts associated with energy can be minimized.

Use salvage, refurbished or reused materials such that the sum of these materials constitutes at least 5%-10%, based on cost, of the total value of materials on the project. Ecosteel materials are made from a minimum of 76% recycled steel.

Considerations: Use of salvaged materials reduces the environmental impacts of producing new construction products and materials. These impacts are significant since buildings account for a large portion of our natural resources consumption, including 40% of raw stone, gravel and sand and 25% of virgin wood.

Considerations: Building products with recycled content are beneficial to the environment because they reduce virgin material use and solid waste volumes.



Considerations: Creative and careful site designs can integrate the natural surroundings with the building(s), providing a strong connection between the built and natural environments and minimizing adverse impacts on the non-built portions of the site.

Alternative Transportation (Public transportation access)

Within ¹/₂ mile of existing commuter rail or subway, or ¹/₄ mile of one or more stops for two or more bus lines Considerations: Reduction is private vehicle use reduces fuel consumption and air and water pollutants in vehicle exhaust. Public transportation is approximately twice as fuel efficient as private vehicles. The environmental impacts of automobile use include vehicle emissions that contribute to smog and air pollution as well as impacts from oil extraction and petroleum refining.

Alternative Transportation (Parking Capacity)

Size parking capacity to not exceed minimum local zoning requirements and provide preferred parking for carpools or vanpools for 5% of the total provided parking spaces

Heat Island Effect (Roof)

Optimize Energy Performance

Measurement and Verification

We will develop and implement a Measurement and Verification plan consistent with Energy conservation Measure Isolation for no less than one year of occupancy

Materials Reuse (5%=1 point, 10%=1 point)

Recycled Content (10% = 1 point, 20% = 1 point)

Use materials with recycled content such that the sum of post-consumer recycled content plus 1/2 of the preconsumer content constitutes at least 10% of the total value of the materials in the project. Utilizing metal insulated panels far exceeds the 20% value (76%) needed for this credit.

Using building materials that have been manufactured within 500 miles of the project site for a minimum of 10% (based on cost) of the total materials value. The primary steel framing provided by EcoSteel is manufactured in Salt Lake City, UT

Considerations: The local economy is supported, transportation costs and environmental impacts are reduced and money paid for these materials is retained in the region.

Environmental Tobacco Smoke (ETS) Control

Considerations: Separate smoking areas occupy space in the building and may result in a larger building, additional material use and increased energy for ventilation.

Innovation in Design (1 to 4 points)

Substantially exceed a LEED for new construction performance credit such as energy performance. Apply strategies that demonstrate a comprehensive approach and quantifiable environment and/or health benefits. In writing, identify the intent of the proposed innovation credit, requirements for compliance, submittals to demonstrate compliance and the design approach. Vertical Arts, from the inception of the design, has been committed to achieving exceptional performance above the requirements set by the LEED for New Construction Green Building Rating System and will qualify for all 4 points this credit requires.

LEED Accredited Professional At least one principal participant of the project team shall be a LEED Accredited Professional (AP). Chris Graham with Ecosteel Building Systems satisfies this requirement.

Considerations: LEED professionals have the expertise required to design a building to LEED standards and to coordinate the documentation process that is necessary for LEED certification.



LED POINTS

Regional Materials (10% manufactured regionally=1 point, 20%= 2 points)

Prohibit Smoking in the building, locate exterior designated smoking areas at least 25 feet away from entries, outdoor intakes and operable windows.



EC STEEL

RK U POR S \mathbf{C} S A Ω **V** BO $\overline{}$ S Б STEAI

ISSUE NAME	DATE	
FDP SUBMITTAL	4.16.07	
REVISED	10.9.07	
DRAWING TITLE		
COVER SHEET		
SHEET NO.		
FDP1 0		