

# The Envision™ Rating System

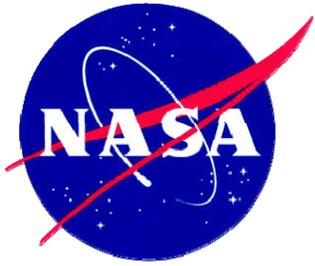
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<sup>1</sup> Imagine the result

# Overview

- Vision for a greener space program
- Purpose and structure of the Envision™ Rating System
- How Envision™ fits in with LEED and other green designations



*Sustainable  
infrastructure  
to improve  
system  
performance  
and enhance  
program  
longevity*



Developing a  
**sustainable space age**  
that includes green certifications



**The next  
phase of  
space vehicles  
and support  
buildings  
will ...**

increase space mission resiliency through sustainability

be designed to grow and change with the evolving space program

minimize demands on the environment by using water and energy more efficiently

work in harmony with the existing natural resources by minimizing footprints of affected areas

develop sustainable practices that can be used in space and even during planetary exploration

# Introduction to Envision™

## THE ENVISION™ RATING SYSTEM



# Envision™ Objectives

- Offer a practical understanding of sustainability and its place in the built environment.
- Create a foundation for expanding professional knowledge and experience in assessing sustainable infrastructure performance.

# Relationship to Other Rating Systems

Envision™ is not intended to supplant existing, sector-specific infrastructure rating systems

Envision™ is intended to provide the essential context for their rating results.



Imagine the result

The  
Envision™  
approach:  
*A total  
infrastructure  
overhaul*

- Accomplish project by project
  - Owners/architects/engineers/constructors working together
  - Setting sustainability goals and objectives
  - Based on available technologies, budgets, risks
- Foundation for Sustainable Use
  - Planning for operations
  - Continuous upgrading to improve sustainable performance
  - Encompass facilities, structures, processes and technologies

# Key Elements of Envision™

## THE ENVISION™ RATING SYSTEM



# System Components

- Consists of 60 Credits organized into 5 Categories, 14 Subcategories
- A total of 845 points possible
- Extra points for innovation
- Establishes five degrees of performance
  - Improved to restorative
- Two components of sustainability contribution
  - Performance – do the project right
  - Pathway – do the right project



Imagine the result

# The Envision™ Rating System Categories



**QUALITY  
OF LIFE**

Purpose, Community, Wellbeing



**LEADERSHIP**

Collaboration, Management, Planning



**RESOURCE  
ALLOCATION**

Materials, Energy, Water



**NATURAL  
WORLD**

Siting, Land & Water, Biodiversity



**CLIMATE  
AND RISK**

Emission, Resilience

# The Envision™ Rating System Credits



## 1 PURPOSE

- QL1.1 Improve Community Quality of Life
- QL1.2 Stimulate Sustainable Growth & Development
- QL1.3 Develop Local Skills & Capabilities

## 2 WELLBEING

- QL2.1 Enhance Public Health & Safety
- QL2.2 Minimize Noise and Vibration
- QL2.3 Minimize Light Pollution
- QL2.4 Improve Community Mobility & Access
- QL2.5 Encourage Alternative Modes of Transportation
- QL2.6 Improve Accessibility, Safety, & Wayfinding

## 3 COMMUNITY

- QL3.1 Preserve Historic & Cultural Resources
- QL3.2 Preserve Views & Local Character
- QL3.3 Enhance Public Space
- QL0.0 Innovate or Exceed Credit Requirements

## 1 COLLABORATION

- LD1.1 Provide Effective Leadership & Commitment
- LD1.2 Establish A Sustainability Management System
- LD1.3 Foster Collaboration & Teamwork
- LD1.4 Provide for Stakeholder Involvement

## 2 MANAGEMENT

- LD2.1 Pursue By-Product Synergy Opportunities
- LD2.2 Improve Infrastructure Integration

## 3 PLANNING

- LD3.1 Plan For Long-Term Monitoring & Maintenance
- LD3.2 Address Conflicting Regulations & Policies
- LD3.3 Extend Useful Life
- LD0.0 Innovate or Exceed Credit Requirements

## 1 MATERIALS

- RA1.1 Reduce Net Embodied Energy
- RA1.2 Support Sustainable Procurement Practices
- RA1.3 Use Recycled Materials
- RA1.4 Use Regional Materials
- RA1.5 Divert Waste From Landfills
- RA1.6 Reduce Excavated Materials Taken Off Site
- RA1.7 Provide For Deconstruction & Recycling

## 2 ENERGY

- RA2.1 Reduce Energy Consumption
- RA2.2 Use Renewable Energy
- RA2.3 Commission & Monitor Energy Systems

## 3 WATER

- RA3.1 Protect Fresh Water Availability
- RA3.2 Reduce Potable Water Consumption
- RA3.3 Monitor Water Systems
- RA0.0 Innovate or Exceed Credit Requirements

## 1 SITING

- NW1.1 Preserve Prime Habitat
- NW1.2 Protect Wetlands & Surface Water
- NW1.3 Preserve Prime Farmland
- NW1.4 Avoid Adverse Geology
- NW1.5 Preserve Floodplain Functions
- NW1.6 Avoid Unsuitable Development on Steep Slopes
- NW1.7 Preserve Greenfields

## 2 LAND+WATER

- NW2.1 Manage Stormwater
- NW2.2 Reduce Pesticide & Fertilizer Impacts
- NW2.3 Prevent Surface & Groundwater Contamination

## 3 BIODIVERSITY

- NW3.1 Preserve Species Biodiversity
- NW3.2 Control Invasive Species
- NW3.3 Restore Disturbed Soils
- NW3.4 Maintain Wetland & Surface Water Functions
- NW0.0 Innovate or Exceed Credit Requirements

## 1 EMISSIONS

- CR1.1 Reduce Greenhouse Gas Emissions
- CR1.2 Reduce Air Pollutant Emissions

## 2 RESILIENCE

- CR2.1 Assess Climate Threat
- CR2.2 Avoid Traps & Vulnerabilities
- CR2.3 Prepare For Long-Term Adaptability
- CR2.4 Prepare For Short-Term Hazards
- CR2.5 Manage Heat Island Effects
- CR0.0 Innovate or Exceed Credit Requirement



# Quality of Life

- Purpose
- Community
- Wellbeing



# LEADERSHIP

- Collaboration
- Management
- Planning



# Resource Allocation

- Materials
- Energy
- Water



# NATURAL WORLD

- Siting
- Land & Water
- Biodiversity



# CLIMATE AND RISK

- Emissions
- Resilience

How is  
Envision™  
used to rate  
projects?

Assessment

Verification

Recognition

Imagine the result

# The Envision™ Rating System

(845 total possible points)

Recognition Level	Minimum Applicable Points
Bronze	20%
Silver Award	30%
Gold Award	40%
Platinum Award	50%

# How Can Envision™ Improve the Future of Space Exploration and New Habitats?

Development of a team that works to identify and address environmental impacts and strives to reduce them

Implementation of sustainable structures that include recycled materials and energy reducing methods

Implementation of a long-term plan to maintain and even improve sustainability through time

Implementation of sustainable practices that can be improved on Earth and eventually implemented on Mars and beyond

# Vision for the 21st Century Space Launch Complex

Upgrades of existing utilities to incorporate recycled materials and energy reducing components

Collection of rainwater to provide non-potable water

Multiuse facilities and launch pads that can be shared between multiple companies to reduce ecological impact

Net zero buildings that could put power back on the grid

Envision™ certified infrastructure to ensure long term viability for the space program

Imagine the result



Imagine the result