Version 1.0

How to Interpret this Report

Purpose The Leadership in Energy and Environmental Design (LEED) Rating System was designed by the US Green Building Council to encourage and facilitate the development of more sustainable buildings. The Barksdale Air Force Base Physical Fitness Center project was evaluated according to this system and the resulting rating is totaled below.

Environmental Categories The report is organized into five environmental categories as defined by LEED including: Sustainable Sites, Water Efficiency, Energy and Atmosphere, Environmental Quality, and Materials and Resources. The category of Design Excellence is also included.

LEED Prerequisites Prerequisites must be achieved. The report indicates where a prerequisite has not been fulfilled by the word "Ineligible." These prerequisites should be addressed immediately by the team, as they are mandatory.

LEED Credits The environmental categories are subdivided into the established LEED credits, which are based on desired performance goals within each category. An assessment of whether the credit is earned, pending, or rejected is made and a narrative describes the basis for the assessment.

Achieved 22 The applicant has provided the mandatory documentation which supports the achievement of the credit requirements, achieving the associated points. Currently the project has scored the adjacent points in this category.

Denied 5 The applicant has applied for a point in a particular credit, but has misinterpreted the credit intent or cannot substantiate meeting the requirements. Currently the project has the adjacent points in this category.

Rating Final Rating is Bronze

Official LEED v1.0 Ratings: Bronze: 22-26 Silver: 27-30 Gold: 31-35 Platinum: 36+

Achieved		Denied		
5		3	Sustainable Site Planning	Possible Points 1

Landscaping for Erosion Control — Credit 1

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		6

Preliminary Review: A copy of the specifications section requiring environmental controls and landscape maintenance has been provided. A drawing is also provided that shows the planting plan for the building. A requirement for this credit is to include an erosion control/stormwater plan, but none has been found. The general specifications do not indicate what measures were implemented, how the project requirements relate to the reference standard indicated (Maryland), and are generally vague in nature.

Requirements Compliance with Sections 4.2 e and f of the Maryland Model Erosion and Sediment Control Ordinance and Section 6 (Group 2) of the Maryland Model Stormwater Management Ordinance.

Submittals
[ ] Stamped drawing(s) and/or specifications highlighting storm water & erosion control measures.
[ ] Storm Water Management Plan that meets the Maryland Department of Environment conditions.
[ ] Erosion Control Plan that meets Maryland Department of Environment conditions.

Technical Advice Please clarify what steps were implemented for erosion control, and how these meet the requirements of LEED. Provide the stormwater/erosion control plan as required.

Final Review No erosion control measures seem to have been implemented during construction. The project claims that the requirements do not apply because this is a flat site. The referenced standard does not exclude flat sites, and no construction phase erosion and sedimentation measures seem to have been adopted.

Landscaping Exterior Design to Reduce Heat Islands - Part 1 — Credit 2.1

1		
4		

Preliminary Review: Shade trees are shown on a site plan, with calculations for site area and number of trees required. Roof plan shows light colored roofing for 100% of the roof area. Site plans show location of light-colored concrete paving. However, no specific information showing the reflectivity of these surfaces has been provided. LEED requires highlighted specifications and letter OR cut sheets for the installed materials to demonstrate compliance with this credit.

Technical Advice Please provide the appropriate highlighted specifications sections, along with a letter or cut sheet stating the albedo reflectance from the manufacturer as required.

Final Review Tree density meets requirements of this credit aspect.

Landscaping Exterior Design to Reduce Heat Islands - Part 2 — Credit 2.2

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4		

Preliminary Review: Please see SS Credit 2.1.

Final Review Roof reflectivity installed does not meet LEED requirements. However, project made efforts to achieve the intent of the credit. If reflectivity and reflective roof calculation is area weighted, the area/reflectivity requirements listed in the credit are achieved. Based on this interpretation, this credit is achieved. Point awarded under 2.1.

Achieved | Denied

Landscaping Exterior Design to Reduce Heat Islands - Part 3 — Credit 2.3

1 | 6

Preliminary Review: Please see SS Credit 2.1.

Requirements Providing high-albedo materials on 80% of the property's non-parking impervious surfaces (e.g. sidewalks, plazas). Materials should have an albedo reflectance of at least 0.5. AND, Place parking underground when feasible. OR, Outdoor parking lots should use light-colored aggregate and not be finished with a final coat of blacktop.

Submittals [ ] Highlighted specifications and stamped drawings confirming that 80% of the non-parking impervious surface material(s) are light in color with an albedo reflectance of at least 0.5.
AND,
[ ] Highlighted specifications and stamped drawings confirming that a light colored aggregate without a final coat of blacktop will be used for impervious surfaces of outdoor parking lots,
OR,
[ ] parking will be placed underground.
[ ] Provide a cut sheet with albedo reflectance highlighted for each impervious surface material(s), or a letter from manufacturer or independent research facility that states the albedo reflectance.

Final Review Reflectivity of paving materials installed does not meet LEED requirements. Credit is denied.

Infill Development — Credit 3

1 | 6

Preliminary Review: A drawing has been provided to show the development area for the project. It is not clear, however, if the density of the area surrounding the facility is at least 100,000 square feet per acre, as required for this credit. The project is located next to a golf course and other open areas, making it unclear how this credit is achieved.

Requirements Place new construction on vacant land located in areas with an existing development density of 100,000 square feet per acre or more, OR,
Rehabilitate an existing building.

Submittals Provide stamped drawing(s) highlighting one of the following:
[ ] A new construction project is sited on vacant land located in an area with existing development density of 100,000 square feet per acre or more. Provide highlighted site plan with proposed project footprint noted as well as an area plan with development density noted.
OR,
[ ] An existing building is being rehabilitated for the proposed project. Provide highlighted site plan with existing footprint noted and architectural drawings with proposed rehabilitation efforts.

Technical Advice Please provide calculations to demonstrate the construction density of the base surrounding the project.

Final Review Development density does not meet LEED requirements. Credit is denied.

Reduced Habitat Disturbance — Credit 4

Not Attempting

Preliminary Review: No Comments.

Site Preservation Restoration - Part 1 — Credit 5.1

Not Attempting

Preliminary Review: No Comments.

Site Preservation Restoration - Part 2 — Credit 5.2

Not Attempting

Preliminary Review: No Comments.

Site Preservation Restoration - Part 3 — Credit 5.3

Not Attempting

Preliminary Review: No Comments.

Achieved		Denied		
1 4			Efficient Building Location	Credit 6

Preliminary Review: Bus routes and site plans have been provided that show the proximity of bus stops adjacent to the project. The requirements for this credit are met.

1 4			Alternative Transportation Facilities - Part 1	Credit 7.1

Preliminary Review: Drawings and a photo have been provided that highlight showers, bike racks and designated carpool spaces. The requirements for two points have been met by achieving all three measures for this credit.

1 4			Alternative Transportation Facilities - Part 2	Credit 7.2

Preliminary Review: Please see SS Credit 7.1.

0 4			Alternative Transportation Facilities - Part 3	Credit 7.3

Preliminary Review: Please see SS Credit 7.1.

1 4			Alternative Fueling Facilities	Bonus Credit 1

Preliminary Review: An amended specification has been provided describing the installation of an electric vehicle recharging station. A photo has also been provided of the installed unit. The requirements for this credit have been met; even though the site plan provided for the alterantive transportation credit does not indicate the recharging station, it appears that this measure has been successfully adopted.

Not Attempting				
			Brownfield Development	Bonus Credit 2

Preliminary Review: No Comments.

Achieved | Denied

3 Energy Efficiency — Possible Points 1

Y 4 Building Commissioning — Prerequisite 1

Preliminary Review: A copy of the commissioning plan and a letter of compliance from the commissioning agent have been provided, thus meeting the requirements for this prerequisite.

Y 4 Energy Efficiency — Prerequisite 2

Preliminary Review: A letter from the engineer states that the project complies with ASHRAE 90.1-1989. Calculations are included. The full energy report is included with documentation for EE Credit 1.1.

2 4 Energy Efficiency - Level 1 — Credit 1.1

Preliminary Review: A letter from the engineer states that the building exceeds ASHRAE 90.1-1989 by 22%. A full energy simulation report is included in support of this credit. However, no comparison summary table has been provided to clarify what is proposed, and how this compares to the baseline. Also, the performance baseline energy use cited in the supporting letter for Energy Prerequisite 2 (45,000 Btu/SF/yr) is different from the performance baseline energy use cited in the supporting letter for this credit (48,808 Btu/SF/yr). A cursory review of modeling results suggests that no energy savings associated with lighting measures was claimed. Would accounting for lighting efficiency improve your score?

Technical Advice: Please clarify what measures are proposed to achieve the energy savings presented, and provide a comparison of the baseline and proposed building that does not require searching through 180 pages of energy model output. Also please clarify why the ASHRAE baseline changes from prerequisite 1 to credit 1.

Final Review: Clarification is provided to achieve 2 points.

Not Attempting — Energy Efficiency - Level 2 — Credit 1.2

Preliminary Review: No Comments.

Not Attempting — Energy Efficiency - Level 3 — Credit 1.3

Preliminary Review: No Comments.

Not Attempting — Energy Efficiency - Level 4 — Credit 1.4

Preliminary Review: No Comments.

Not Attempting — Energy Efficiency - Level 5 — Credit 1.5

Preliminary Review: No Comments.

Not Attempting — Natural Ventilation, Heating & Cooling — Credit 2

Preliminary Review: No Comments.

Achieved | Denied

1
4

Waste Heat Recovery System — Credit 3

Preliminary Review: A letter from the engineer describes the method of heat recovery used in this project, along with an explanation of the system. A Credit Equivalence Form is also included because the project realized a 19.3% recovery rate, rather than the 20% required for this credit. The project incorporated heat recovery systems into the chiller and into the exhaust air stream. Due to the extreme size of the chiller, the project was unable to capture a full 20% of the waste heat stream. Calculations utilize full capacity of chiller, even though peak building load is only half of chiller capacity. If chiller is staged, can you make a case for a higher percentage of waste heat recovery based on part-load assumptions?

Technical Advice: Reviewer would like to give the project the opportunity to revise the heat recovery savings calculations. Base the per cent savings calculation on the annual waste heat generated instead of maximum waste heat capacity of the chiller.

Final Review: Revised calculations are provided to achieve this credit.

Not Attempting

Renewable/Alternative Energy - Level 1 — Credit 4.1

Preliminary Review: No Comments.

Not Attempting

Renewable/Alternative Energy - Level 2 — Credit 4.2

Preliminary Review: No Comments.

Not Attempting

Renewable/Alternative Energy - Level 3 — Credit 4.3

Preliminary Review: No Comments.

Not Attempting

Measurement and Verification — Bonus Credit 1

Preliminary Review: No Comments.

Achieved		Denied		
4		1	Conserving Materials & Resources	Possible Points 1

Y
4

Elimination of CFC's
Prerequisite 1

Preliminary Review: A letter from the engineer confirms that no CFCs or halons were used on this project. The requirements for this credit are met.

Y
4

Storage & Collection of Recyclables
Prerequisite 2

Preliminary Review: A copy of the specifications is included that describes the recycling bins to be installed, along with a cut sheet for the bins. A drawing is included that shows the location of the bins. The requirements for this prerequisite are met.

Not Attempting

Existing Building Rehabilitation - Level 1
Credit 1.1

Preliminary Review: No Comments.

Not Attempting

Existing Building Rehabilitation - Level 2
Credit 1.2

Preliminary Review: No Comments.

Not Attempting

Resource Reuse - Level 1
Credit 2.1

Preliminary Review: No Comments.

Not Attempting

Resource Reuse - Level 2
Credit 2.2

Preliminary Review: No Comments.

1
4

Recycled Content - Level 1
Credit 3.1

Preliminary Review: The required documentation has been provided. It was necessary to remove three entries from the calculations because the post-industrial recycled content was below 45%, but the percentage change was negligible (31.75% down to 31.6%) and still meets the requirements. This credit is achieved.

Not Attempting

Recycled Content - Level 2
Credit 3.2

Preliminary Review: No Comments.

1
4

Construction Waste Management Plan - Level 1
Credit 4.1

Preliminary Review: A copy of the waste management specifications has been provided, which describes the waste management plan for the project. The project had a goal of recycling 75%, and almost reached that benchmark with 68.8% recycled. The Waste Management Plan called for recycling of plastic, glass, carpet, gyp board, paint, and insulation, but none of these materials show up in the calculations for end of project recycling rates. Were these materials recycled? Achieving the second point in this credit requires the recycling of some materials not listed in the end of project calculations.

Technical Advice: Please clarify the reason that materials listed in the Waste Management Plan were not included in the recycling report for the additional credit point.

Achieved | | Denied

		1	Construction Waste Management Plan - Level 2 — Credit 4.2
		6	

Preliminary Review: Please see MR Credit 4.1.

Requirements: Meet the requirements above and also recycle clean dimensional wood, plastic, glass, gypsum board, and carpet, and evaluate the cost-effectiveness of recycling rigid foam insulation, engineered wood products and other materials.

Submittals: [ ] Advanced Construction Waste Management Plan: Contractors to submit the requirements listed above and note the Advanced practices in both the specifications and the Plan.

Final Review: Additional information suggests that additional materials were recycled during the construction process. However, documentation is vague at best. Also, no description of gypsum wallboard recycling has been provided. This is a required material to achieve advanced construction waste management credit.

1			Local Materials — Credit 5
4			

Preliminary Review: The project provided excellent documentation for all materials credits, as well as exceeded the requirements by almost triple for this credit. Unfortunately, LEED Version 1.0 has no provisions for granting extra points for this effort, as requested by the applicant.

Not Attempting			Elimination of CFCs, HCFCs, and Halons - Part 1 — Credit 6.1

Preliminary Review: No Comments.

Not Attempting			Elimination of CFCs, HCFCs, and Halons - Part 2 — Credit 6.2

Preliminary Review: No Comments.

1			Occupant Recycling Equipment — Credit 7
4			

Preliminary Review: This project does not have a compactor or baler installed. However, the project is recycling 70-75% of its paper, newspaper and cardboard, as well as cans and glass or plastic bottles for an additional 15-20%. A recycling contractor picks up all paper products once a week; it appears that this action meets the intent of a compactor/baler by diverting material from the landfill and conserving resources. The added recycling efforts bring the aggregate diversion rate to greater than 75%, the requirement for buildings of fewer than three stories. Therefore, this credit intent has been met, and the point achieved.

Achieved		Denied		
6		1	Indoor Environmental Quality	Possible Points

Y
4

Elimination & Control of Asbestos — Prerequisite 1

Preliminary Review: A letter has been provided certifying that no asbestos-containing materials were installed in the project. This prerequisite requirements are met.

Y
4

Indoor Air Quality — Prerequisite 2

Preliminary Review: A letter from the engineer states compliance with ASHRAE 62-1989, along with ventilation rates. Drawings are provided with highlights showing the location of air intakes away from contamination sources. The requirements for this prerequisite are met.

Y
4

Smoking Ban — Prerequisite 3

Preliminary Review: The requirements for this prerequisite are met as stated in two letters of compliance.

Y
4

Thermal Comfort — Prerequisite 4

Preliminary Review: A letter from the engineer states that this project complies with ASHRAE 55-1992. Temperature and humidity are in the compliant ranges. Air flow rates are higher than ASHRAE standards, but acceptable for this facility type. The requirements for this prerequisite are met.

1
4

Construction IAQ Management Plan - Level 1 — Credit 1.1

Preliminary Review: A copy of the specifications sections is provided that outlines the construction IAQ plan requirement for the contractor. A copy of the construction IAQ plan is provided from the contractor stating compliance with SMACNA guidelines plus extra measures to meet the credit requirements. The first point has been achieved for this credit.

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4

Construction IAQ Management Plan - Level 2 — Credit 1.2

Preliminary Review: Level 2 IAQ management requires that the project address construction contaminants prior to occupancy. Please describe how this was achieved.

Technical Advice: Describe dust, chemical, and contaminant control measures implemented during construction to achieve the second point in this category.

Final Review: Additional information has been provided to describe contaminant control and cleaning procedures. Credit achieved.

1
4

Low VOC Materials - Part 1 — Credit 2.1

Preliminary Review: A spreadsheet of all materials lists VOC content in one column, the materials meet the requirements based on the LEED Reference Guide and therefore this credit is achieved.

1
4

Low VOC Materials - Part 2 — Credit 2.2

Preliminary Review: Please see EQ Credit 2.1.

Achieved | Not Attempting | Denied

Low VOC Materials - Part 3

Credit 2.3

Preliminary Review: No Comments.

Permanent Air Monitoring System

Credit 3

16

Preliminary Review: No documentation provided for this credit, barring an email inquiry regarding whether or not the system was installed. This credit is rejected unless documentation can be provided.

Requirements Install a permanent air monitoring system. The system should have the capability to monitor supply and return air, and ambient air at the fresh air intake, for carbon monoxide (CO), carbon dioxide (CO2), total volatile organic compounds (TVOCs), and particulates (including PM10).

Submittals [ ] Provide highlighted as-built drawings, specifications and cut-sheets for a permanent air monitoring system. Note installation sites and emission monitored per Credit requirements.

Technical Advice Please clarify whether your project addressed this credit or not.

Final Review No additional documentation provided.

Chemical Storage Areas

Credit 4

14

Preliminary Review: Highlighted drawings have been provided to show the separate ventilation and plumbing for the janitor closet. A letter confirms the janitor closet is under negative pressure. Contract documents have been submitted that show the addition of the exhaust fans to the janitor closet area. The requirements for this credit are met.

Architectural Entryways

Credit 5

14

Preliminary Review: Drawings, cut sheets and specifications clearly demonstrate the entryway system installed on the project. The requirements for this credit are met.

Achieved		Denied		
3			Safeguarding Water	Possible Points

Y
4

Water Conservation — Prerequisite 1

Preliminary Review: Highlighted cut sheets have been supplied that show all fixtures comply. The requirements for this prerequisite are met.

Y
4

Water Quality — Prerequisite 2

Preliminary Review: Highlighted specifications and cut sheets, as well as a letter stating compliance are included. The requirements for this prerequisite are met.

Not Attempting

Water-Conserving Fixtures — Credit 1

Preliminary Review: No Comments.

1
4

Water Recovery System — Credit 2

Preliminary Review: The project installed a rainwater harvest system that is used to flush toilets and urinals. Calculations have been provided to support the sizing of the collection tank. Drawings are included that show all piping for the rainwater harvest and dispersion system. A copy of the specifications is included that describes in detail the system, and cut sheets are supplied for system components. The requirements for this credit are met.

Not Attempting

Water-Conserving Cooling Towers — Credit 3

Preliminary Review: No Comments.

1
4

Water-Efficient Landscaping — Credit 4

Preliminary Review: Verification from the landscape architect is provided stating that xeriscaping was installed, along with a plant list. A letter from the project architect further states that no permanent irrigation system was installed. The requirements for this credit are met.

1
4

Surface Runoff Filtration — Credit 5

Preliminary Review: Drawings showing the run-off swales and infiltration trenches are provided. However, it is unclear how the systems shown provide filtration, and specifications for these systems were not found and are required for this credit.

Technical Advice: Please provide a copy of the specifications section that describes the surface runoff filtration, and describe how systems installed perform this function.

Final Review: Specifications provided, credit achieved.

Not Attempting

Surface Runoff Reduction — Credit 6

Preliminary Review: No Comments.

Not Attempting

Biological Waste Treatment — Bonus Credit 1

Preliminary Review: No Comments.

Achieved | Denied

Not Attempting

Measurement and Verification

Bonus Credit 2

Preliminary Review: No Comments.

Achieved		Denied		
1			Design Excellence	Possible Points

1			LEED Certified Designer	Credit 1
4			Preliminary Review: A LEED Accredited professional was part of the project team. The LEED certificate has been provided. The requirements for this credit are met.	