

LEED Certification Review Report

This report contains the results of the technical review of an application for LEED® certification submitted for the specified project. LEED certification is an official recognition that a project complies with the requirements prescribed within the LEED rating systems as created and maintained by the U.S. Green Building Council® (USGBC®). The LEED certification program is administered by the Green Business Certification Inc. (GBCI®).

Western Tech - Diesel Building Addition

Project ID	100
Rating system & version	LEE
Project registration date	03/

L000031048 _EED-NC v2009)3/05/2013



Certified (Gold)

CERTIFIED: 40-49, SILV ER: 50-59, GOLD: 60-79, PLATINUM: 80+

LEED 2009 NEW CONSTRUCTION

ATTEMPTED: 67, DENIED: 3, PENDING: 0, AWARDED: 64 OF 109 POINTS

SUS	TA INA BLE SITES	7 OF 26
USSp:	Construction Activity Pollution Prevention	Y
SSc	Site Selection	1/1
SSc2	Development Density and Community Connectivity	0/5
SSc	Brownfield Redevelopment	0/1
SSc4	.1Alternative Transportation-Public Transportation Access	0/6
SSc4	.2Alternative Transportation-Bicycle Storage and Changing Room	1/1
SSc4	.3Alternative Transportation-Low-Emitting and Fuel-Efficient V	0/3
SSc4	.4Alternative Transportation-Parking Capacity	2/2
SSc	.1Site Development-Protect or Restore Habitat	0/1
SSc	.2Site Development-Maximize Open Space	0/1
SSce	.1Stormwater Design-Quantity Control	1/1
SSce	.2Stormwater Design-Quality Control	1/1
SSc	'.1Heat Island Effect, Non-Roof	0/1
SSc	2Heat Island Effect-Roof	1/1
SSc	Light Pollution Reduction	0/1
WAT	ER EFFICIENCY	8 OF 10
WED	1 Water Use Reduction-20% Reduction	Y
WEC	1 Water Efficient Landscaping	2/4
WEC	2 Innovative Wastewater Technologies	2/2
WEC	3 Water Use Reduction	4/4
	RGY AND ATMOSPHERE	24 OF 35
EAD	Fundamental Commissioning of the Building Energy Systems	Y
EAp	2 Minimum Energy Performance	Y
EAp.	3 Fundamental Refrigerant Mgmt	Y
EAc	Optimize Energy Performance	19/19
EAc	2 On-Site Renewable Energy	0/7
EAc	Enhanced Commissioning	0/2
EAc4	Enhanced Refrigerant Mgmt	2/2
EAc	Measurement and Verification	3/3
EAce	Green Power	0/2
	ERIALS AND RESOURCES	7 OF 14
MRp	1 Storage and Collection of Recyclables	Y
MRc	1.1Building Reuse-Maintain Existing Walls, Floors and Roof	0/3
MRc	1.2Building Reuse - Maintain 50% of Interior Non-Structural Ele	0/1
MRc	2 Construction Waste Mgmt	2/2
MRc	3 Materials Reuse	0/2
MRc	4 Recycled Content	2/2

	MATERIALS AND RESOURCES	CONTINUED
2	MRc5 Regional Materials	2/2
	MRc6 Rapidly Renewable Materials	0/1
	MRc7 Certified Wood	1/1

	INDOOR ENVIRONMENTAL QUALITY	12 OF 15
ļ	IEQp1 Minimum IAQ Performance	Y
	IEQp2 Environmental Tobacco Smoke (ETS) Control	Y
	IEQc1 Outdoor Air Delivery Monitoring	1/1
	IEQc2 Increased Ventilation	1/1
	IEQc3.1Construction IAQ Mgmt Plan-During Construction	1/1
	IEQc3.2Construction IAQ Mgmt Plan-Before Occupancy	1/1
	IEQc4.1Low-Emitting Materials-Adhesives and Sealants	1/1
	IEQc4.2Low-Emitting Materials-Paints and Coatings	1/1
	IEQc4.3Low-Emitting Materials-Flooring Systems	1/1
	IEQc4.4Low-Emitting Materials-Composite Wood and Agrifiber Products	1/1
	IEQc5 Indoor Chemical and Pollutant Source Control	0/1
	IEQc6.1Controllability of Systems-Lighting	1/1
	IEQc6.2Controllability of Systems-Thermal Comfort	1/1
	IEQc7.1Thermal Comfort-Design	1/1
	IEQc7.2Thermal Comfort-Verification	1/1
	IEQc8.1Daylight and Views-Daylight	0/1
	IEQc8.2Daylight and Views-Views	0/1

INNOVATION IN DESIGN	3 OF 6
IDc1.1 Innovation in Design	0/1
IDc1.1 Exemplary Performance CWM	1/1
IDc1.2 Innovation in Design	0/1
IDc1.2 Innovation in Design	0/1
IDc1.3EAc1 Exemplary Performance	1/1
IDc1.3 Innovation in Design	0/1
IDc1.4 Innovation in Design	0/1
IDc1.4 Innovation in Design	0/1
IDc1.5 Innovation in Design	0/1
IDc1.5 Innovation in Design	0/1
IDc2 LEED® Accredited Professional	1/1
REGIONAL PRIORITY CREDITS	3 OF 3
SSc1 Site Selection	1/1
SSc4.2Alternative Transportation-Bicycle Storage and Changing Room	1/1
SSc6.1Stormwater Design-Quantity Control	1/1

TOTAL 64 OF 109

CREDIT DETAILS



Project Information Forms

Plf1: Minimum Program Requirements Approved

08/08/2014 CONSTRUCTION FINAL REVIEW

06/30/2014 CONSTRUCTION PRELIMINARY REVIEW

05/28/2014 DESIGN FINAL REVIEW

The LEED Project Information Form has been revised to address the issues outlined in the Preliminary Review comments and confirms that ENERGY STAR Portfolio Manager title matches the LEED-NC project name as required.

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Project Information Form has been submitted stating that the project complies with all Minimum Program Requirements. The project Owner has signed the form. The project will comply with MPR 6: Must Commit to Sharing Whole-Building Energy and Water Usage Data, via Option 1. The project is located in La Crosse, Wisconsin.

However, the ENERGY STAR Portfolio Manager title does not match the LEED-NC project name as required.

TECHNICAL ADVICE:

Please revise the ENERGY STAR Portfolio Manager or LEED-NC project name as necessary to ensure consistency.

Plf2: Project Summary Details Approved

08/08/2014 CONSTRUCTION FINAL REVIEW

06/30/2014 CONSTRUCTION PRELIMINARY REVIEW

05/28/2014 DESIGN FINAL REVIEW

This Project Information Form was previously approved in the Design Preliminary Review. No changes have been made.

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Project Information Form has been submitted including the following project summary details. There is one building in this LEED-NC application with a total of one story and 21,880 gross square feet. The project is 100% new construction. The total site area within the LEED-NC project boundary is 128,000 square feet and the building area to site area ratio is 17.09%. The project is not located on a campus. There are 85 parking spaces available to the occupants, one floor above grade (excluding parking levels). The site was previously developed. The building uses energy from natural gas, electricity, and on-site renewables and uses water from a municipal potable water system. The sewage is conveyed to a municipal sewer system. The total project budget is \$4,000,000.

Plf3: Occupant and Usage Data

Approved

08/08/2014 CONSTRUCTION FINAL REVIEW

06/30/2014 CONSTRUCTION PRELIMINARY REVIEW

This Project Information Form was previously approved in the Design Preliminary Review. No changes have been made.

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Project Information Form has been submitted including the following occupant and usage data. The occupant is a state government and the project consists primarily of classroom spaces. The building is intended to be owner-occupied after project completion. The average users value is 35, the peak users value is 35, the FTE value is 3, and the building is occupied 170 days per year.

Plf4: Schedule and Overview Documents Approved

08/08/2014 CONSTRUCTION FINAL REVIEW

06/30/2014 CONSTRUCTION PRELIMINARY REVIEW

05/28/2014 DESIGN FINAL REVIEW

This Project Information Form was previously approved in the Design Preliminary Review. No changes have been made.

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Project Information Form has been submitted including the design and construction schedule, the estimated date of substantial construction completion is noted as March 1, 2014, and the estimated date of occupancy is noted as March 15, 2014. The following required documents have been uploaded: exterior building photos, interior photos, floor plans, site plan and mechanical schedule. Additionally, the building systems narrative and the project narrative have been provided.

SSp1: Construction Activity Pollution Prevention

Awarded

08/08/2014 CONSTRUCTION FINAL REVIEW

The additional documentation demonstrates compliance.

06/30/2014 CONSTRUCTION PRELIMINARY REVIEW

The LEED Form states that the project has implemented an erosion and sedimentation control (ESC) plan that conforms to the 2003 EPA Construction General Permit (CGP). However, to demonstrate compliance, the following must be addressed.

TECHNICAL ADVICE

1. Provide a revised narrative to confirm that the ESC plan was implemented appropriately. Ensure that the documentation confirms the implemented measures, the frequency of inspections, and includes information regarding any corrective actions taken.

2. It is unclear if the ESC plan includes the proper measures for the prevention of air pollution (dust and particulate matter). Provide a revised ESC plan and supporting documentation that includes detailed information describing the measures taken for the prevention of polluting the air with dust and particulate matter.

SSc1: Site Selection

Awarded: 1

POSSIBLE POINTS: 1 ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

07/10/2014 CONSTRUCTION PRELIMINARY REVIEW

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Credit Form has been provided stating that the project site does not meet any of the prohibited criteria.

SSc2: Development Density and Community Connectivity POSSIBLE POINTS: 5	Not Attempted
SSc3: Brownfield Redevelopment POSSIBLE POINTS: 1	Not Attempted
SSc4.1: Alternative Transportation-Public Transportation Access POSSIBLE POINTS: 6	Not Attempted

SSc4.2	2: Alt	ernat	tive 1	Frans	porta	tion-
Bicycle	e Sto	rage	and	Chan	ging	Rooms
	DOINTC	1				

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

07/10/2014 CONSTRUCTION PRELIMINARY REVIEW

05/28/2014 DESIGN FINAL REVIEW

The LEED Credit Form has been revised to address the issues outlined in the Preliminary Review comments and states that sufficient bicycle storage has been provided to serve all occupants that use the amenities. A response narrative and photographs have also been provided. The documentation demonstrates credit compliance.

Awarded: 1

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Credit Form has been provided stating that the project includes commercial / institutional spaces and that bicycle storage facilities have been provided to serve 5.71% of the LEED-NC project FTE and transient occupants,

measured at peak occupancy, and shower facilities have been provided for 66.67% of the LEED-NC project FTE occupants. Bicycle storage facilities must be provided for at least 5% of project FTE and transient occupants, and shower facilities must be provided for at least 0.5% of FTE project occupants. Plans have been provided showing the location of the bicycle storage and shower facilities.

However, it appears that the bicycle storage may be shared with occupants in the attached building, and it is unclear how the facilities are being allocated between the projects.

TECHNICAL ADVICE:

Please provide a narrative and a revised site plan highlighting how the bicycle storage are part of the project scope and/or will be allocated to the LEED project building.

Alternatively, provide supplemental calculations which confirm that sufficient bicycle storage and shower facilities have been provided to serve all occupants with access to the amenities, including individuals who are not part of this LEED-NC project.

Denied

SSc4.3: Alternative Transportation-Low-Emitting and Fuel-Efficient Vehicles

POSSIBLE POINTS: 3 ATTEMPTED: 3, DENIED: 3, PENDING: 0, AWARDED: 0

07/10/2014 CONSTRUCTION PRELIMINARY REVIEW

05/28/2014 DESIGN FINAL REVIEW

The LEED Credit Form has been revised to address the issues outlined in the Preliminary Review comments and states that preferred parking spaces for low-emitting and fuel-efficient vehicles have been provided for 5.88% of total parking capacity. A response narrative and photographs have been provided.

However, the location of the designated spaces does not meet the LEED definition of preferred, as required. Preferred spaces are those spaces located closest to the main entrance of the project (exclusive of spaces designed for handicapped). The documentation does not demonstrate credit compliance.

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Credit Form has been provided stating that the project complies with Option 1 and provides preferred parking spaces for low-emitting and fuel-efficient vehicles for 5.88% of total parking capacity. Preferred parking for low-emitting and fuel-efficient vehicles must be provided for at least 5% of the total parking capacity. A site plan (highlighting the total parking capacity and the preferred parking spaces) and signage images (indicating the reserved status of these spaces) have been provided.

However, two issues are pending:

1. The location of the designated spaces does not appear to meet the LEED definition of preferred, as required. Preferred spaces are those spaces located closest to the main entrance of the project (exclusive of spaces designed for handicapped).

2. The documentation indicates that the LEED project parking is located in a portion of a parking area which is shared with other occupants of the campus, and it is unclear how parking has been allocated between the LEED project and other building occupants. It is also unclear how the total project parking has been determined, and whether preferred parking will be reserved for LEED project occupants.

TECHNICAL ADVICE:

1. Please provide documentation, such as a narrative and/or revised site drawings, to confirm that the low-emitting and fuel-efficient vehicle parking spaces are located so as to meet the LEED definition of preferred.

2. Provide a narrative and revised site plan highlighting the parking allocated to the LEED project building. If parking is to be shared with neighboring building occupants, provide a narrative or signage samples indicating how sufficient preferred parking will be reserved for occupants of the LEED project building. Alternatively, the project may demonstrate that preferred parking spaces for low-emitting and fuel-efficient vehicles have been provided for at least 5% of the total parking capacity of the shared parking area. In this case, provide revised site plans, calculations, and a narrative to demonstrate compliance at the whole-parking area level.

Awarded: 2

07/10/2014 CONSTRUCTION PRELIMINARY REVIEW

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Credit Form has been provided stating that no new parking has been created within the LEED-NC project scope of work. The project Owner has signed the form.

SSc6.1: Stormwater Design-Quantity Control POSSIBLE POINTS: 1	Awarded: 1
SSc5.2: Site Development-Maximize Open Space POSSIBLE POINTS: 1	Not Attempted
SSc5.1: Site Development-Protect or Restore Habitat POSSIBLE POINTS: 1	Not Attempted

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

07/10/2014 CONSTRUCTION PRELIMINARY REVIEW

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Credit Form has been provided stating that prior to development of this project, the existing site imperviousness was greater than 50%; therefore, Case 2 applies. A storm water management plan has been implemented such that the post-development site runoff quantity has been reduced by 75.5% for the two-year, 24-hour design storm. A minimum reduction of 25% must be achieved. The pre- and post-development runoff values have been provided within the form.

SSc6.2: Stormwater Design-Quality Awarded: 1 Control POSSIBLE POINTS: 1 ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

07/10/2014 CONSTRUCTION PRELIMINARY REVIEW

05/28/2014 DESIGN FINAL REVIEW

The LEED Credit Form has been revised to address the issues outlined in the Preliminary Review comments and confirms the TSS removal rate for the BMPs. A response narrative has also been provided. The documentation demonstrates credit compliance.

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Credit Form has been provided stating that storm water runoff from 90% of the average annual rainfall is captured or treated such that 80% of the average annual post-development Total Suspended Solids (TSS) is removed. The form lists the project BMPs and structural controls and describes the contribution to storm water filtration of each, including their TSS removal rate and percent of annual rainfall volume treated.

However, the TSS removal rates provided are atypical based on industry standards.

TECHNICAL ADVICE:

Please provide a narrative to describe how the TSS removal rate for the BMPs and structural controls was determined. Note that if any BMPs or structural controls listed in the form are acting in series, a supplemental narrative and calculations should be provided within the special circumstances section to confirm the treatment rate of that series.

SSc7.1: Heat Island Effect, Non-Roof POSSIBLE POINTS: 1

Not Attempted

Awarded: 1

05/28/2014 DESIGN FINAL REVIEW

The LEED Credit Form has been revised to address the issues outlined in the Preliminary Review comments and states 120.58% of the base building roof surface has a Solar Reflectance Index. The documentation demonstrates credit compliance.

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Credit Form has been provided stating that 112.82% of the base building roof surface has a Solar Reflectance Index meeting the credit requirements, therefore the project complies with Option 1. A minimum of 75% of the roof area must be SRI-compliant to achieve this credit via Option 1. The table listing the compliant SRI roofing materials, a roof plan, and manufacturer documentation for the installed roofing materials have been provided.

However, it appears that the roof for the storage facility located to the south of the project building has not been included in the total roof area reported in Table SSc7.2-1.

TECHNICAL ADVICE:

Please revise the total roof area reported in Table SSc7.2-1 to include the roof area of the storage facility located to the south of the project building.

SSc8: Light Pollution Reduction POSSIBLE POINTS: 1 Not Attempted

WEp1: Water Use Reduction-20% Reduction

Awarded

06/25/2014 CONSTRUCTION PRELIMINARY REVIEW

The review comments requested that the water use calculations be revised to reflect a default 50/50 male/female occupancy load for the project unless documentation could be provided to support an unbalanced ratio for the life of the building. Per the Water Use Reduction, Additional Guidance document referenced in the review comments, historical occupancy trend data is not sufficient. As this final submittal documentation provided historical data and an unsubstantiated statement regarding future unbalanced occupancy ratios of 98% male / 2% female. No forward facing trend data was provided as required.

The reviewer recalculated the water savings for WEp1/WEc3 based on a 50/50 occupant split and also adjusted the lavatory faucet calculation to reflect auto-control type fixtures. This adjustment to the calculations resulted in a revised total potable water savings of 40.78% from a calculated baseline and a reduction of potable water for sewage conveyance of 37.24% from the baseline.

After taking a closer look at the submittal documentation it appears that the project plumbing fixture count was adjusted from the plumbing code requirement, which also references a balanced male-female occupant ratio, and has provided fixtures based on a 10% female to 90% male occupant projection. Although this was not highlighted in the submittal, because the project appears to have been specifically designed, and approved by the local building authority, with a modified occupant ratio, the project complies with special circumstance #1 under the Gender Ratio Modification section of the Additional Guidance document.

The water use calculations for WEp1 have been recalculated to incorporate a 90/10 male to female ratio for both students and FTE staff to align with the plumbing design. Additionally, the lavatory faucets have been adjusted to metering type fixtures with a 0.5 gpm flow for a 12 second cycle (0.1 gpc). The revised calculations result in a total water use reduction of 58.35% from a baseline case and a 58.19% reduction in potable water for sewage conveyance.

05/28/2014 DESIGN FINAL REVIEW

The LEED Prerequisite Form has been revised to address the issues outlined in the Preliminary Review comments and states that the potable water usage in the project has been reduced by 53.12% from a calculated Baseline design. A response narrative, plumbing fixture submittal, and enrollment forecasting have been provided.

However, two issues remain outstanding:

1. The enrollment forecasting document does not confirm that the ratio will apply for the life of the building. Therefore, the alternative gender ratio is not justified.

2. The fixture schedule indicates that the lavatories are autocontrol faucets but the flow rates have not been converted from gallons per minute (GPM) to gallons per cycle (GPC), and the fixture type has not been listed as Metering in Table WEp1-4 Flow Fixture Data. When autocontrol lavatory faucets are used, flow rates may be converted from GPM to GPC based on duration and the metering baseline fixture type should be selected as outlined in USGBC`s Water Use Reduction Additional Guidance. Please note that autocontrol faucets have a default 12-second design case duration when converting to GPC per Table 2 within the WEp1 section of the LEED Reference Guide for Green Building Design and Construction, 2009 Edition.

When recalculated to address these issues, the potable water usage in the project has been reduced by 40.78% from a calculated Baseline design and compliance is not affected. The documentation demonstrates prerequisite compliance.

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Prerequisite Form and water use calculations have been provided stating that the potable water usage in the project has been reduced by 53% from a calculated Baseline design. A minimum reduction of 20% is required.

However, two issues are pending:

1. A plumbing fixture schedule has not been provided as required. Documentation is needed to verify the fixture manufacturer, model, and flush or flow rate claimed.

2. The calculations indicate an occupancy breakdown of 98% males and 2% females based on historical occupancy. The calculations require a balanced, one-to-one gender ratio unless project-specific conditions warrant an alternative ratio for the lifespan of the building. Note that current staffing level is not an acceptable rationale for deviating from the standard usage ratio of 50% male and 50% female.

TECHNICAL ADVICE:

1. Please provide a plumbing fixture schedule or manufacturer documentation which includes all applicable fixtures/fittings within the LEED-NC project.

2. Revise the form to ensure that a balanced, one-to-one gender ratio is utilized for the calculations. If project-specific conditions exist where an alternative ratio is justified for the lifespan of the building, provide a narrative and supporting documentation to confirm that the ratio applies for the life of the building.

Refer to the LEED Reference Guide for Green Building Design and Construction, 2009 Edition, and the Water Use Reduction Additional Guidance found on the USGBC website for additional information regarding acceptable special gender circumstances. Provide either documentation of the code-required plumbing fixture counts, or data forecasting forward that shows the gender ratio will exist for the lifetime of the building.

WEc1: Water Efficient Landscaping

Awarded: 2

ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

06/25/2014 CONSTRUCTION PRELIMINARY REVIEW

The preliminary design review comment indicated that the average value species factor (Ks) for turfgrass was not used in the baseline calculations, and required revision.

The LEED Credit Form was revised and re-submitted for the design final review. The project team appropriately revised the baseline case to reflect the average species factor (Ks) values for both turfgrass and mixed vegetation (plantings). The design case Ks for turfgrass was also revised from high to average.

It appears that the project team made the adjustment to the design case in an effort to maintain consistency between the baseline and design cases (reflecting the same Ks for both cases.) As the landscape plan does not indicate that any unique species of turfgrass has been selected for this project, it is appropriate for the team to adjust both the design and the baseline Ks to reflect the average value of 0.7. The documentation demonstrates credit compliance.

05/28/2014 DESIGN FINAL REVIEW

The LEED Credit Form has been revised to address the issues outlined in the Preliminary Review comments and states that the landscaping and irrigation systems have been designed to reduce potable water consumption for irrigation by 54.64% and has reduced the total water used for irrigation by 54.64% from a calculated Baseline Case. A response narrative, irrigation plan, and irrigation product information has been provided.

However, the species factor (ks) for the turf grass in the design case has been revised from 0.8 in the Preliminary Review to 0.7 in the Final Review and no information has been provided supporting this change. When recalculated using 0.8 as the species factor for the turf grass in the design case, the landscaping and irrigation systems have been designed to reduce potable water consumption for irrigation by 48.26%. The documentation does not demonstrate credit compliance.

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Credit Form has been provided stating that the landscaping and irrigation systems have been designed to reduce potable water consumption for irrigation by 54.97% and has reduced the total water used for irrigation by 54.97% from a calculated Baseline Case. A minimum reduction of 50% in potable water is required. The site plan has been provided which describe the landscape and irrigation design strategies employed by the project.

However, two issues are pending:

1. The site plan does not show all landscaped areas.

2. The provided calculations indicate that the Baseline Case does not use average values for species factor (ks) as required.

TECHNICAL ADVICE:

1. Please provide the site plan highlighting all landscaped areas as required.

2. Provide revised calculations to ensure that the Baseline Case uses average values for species factor (ks). For additional information, refer to the calculations section within WEc1 in the LEED Reference Guide for Green Building Design and Construction, 2009 Edition. Provide a narrative confirming any design changes made to enable compliance.

Awarded: 2

06/25/2014 CONSTRUCTION PRELIMINARY REVIEW

The review comments requested that the water use calculations be revised to reflect a default 50/50 male/female occupancy load for the project unless documentation could be provided to support an unbalanced ratio for the life of the building. Per the Water Use Reduction, Additional Guidance document referenced in the review comments,

historical occupancy trend data is not sufficient. As this final submittal documentation provided historical data and an unsubstantiated statement regarding future unbalanced occupancy ratios of 98% male / 2% female. No forward facing trend data was provided as required.

The reviewer recalculated the water savings for WEp1/WEc3 based on a 50/50 occupant split and also adjusted the lavatory faucet calculation to reflect auto-control type fixtures. This adjustment to the calculations resulted in a revised total potable water savings of 40.78% from a calculated baseline and a reduction of potable water for sewage conveyance of 37.24% from the baseline, which does not meet the minimum 50% potable water reduction required for this credit.

After taking a closer look at the submittal documentation it appears that the project plumbing fixture count was adjusted from the plumbing code requirement, which also references a balanced male-female occupant ratio, and has provided fixtures based on a 10% female to 90% male occupant projection. Although this was not highlighted in the submittal, because the project appears to have been specifically designed, and approved by the local building authority, with a modified occupant ratio, the project complies with special circumstance #1 under the Gender Ratio Modification section of the Additional Guidance document.

The water use calculations for WEp1 have been recalculated to incorporate a 90/10 male to female ratio for both students and FTE staff to align with the plumbing design. Additionally, the lavatory faucets have been adjusted to metering type fixtures with a 0.5 gpm flow for a 12 second cycle (0.1 gpc). The revised calculations result in a total water use reduction of 58.35% from a baseline case and a 58.19% reduction in potable water for sewage conveyance. The revised calculations demonstrate credit compliance.

05/28/2014 DESIGN FINAL REVIEW

The clarifications for WEp1: Minimum Use Reduction-20% Reduction have been provided to address the issues outlined in the Preliminary Review.

However, the potable water usage in the project has been recalculated based on issues indicated there, and the calculations indicate that the project has reduced potable water for sewage conveyance by 37.24%, which does not meet the minimum requirements of this credit. The documentation does not demonstrate credit compliance.

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Credit Form has been provided stating that the project has reduced potable water for sewage conveyance by 65% via Option 1. A minimum reduction of 50% is required. The reduction has been achieved by the use of high-efficiency flush fixtures.

However, WEp1: Water Use Reduction has been denied pending clarifications.

TECHNICAL ADVICE:

Please see the comments within WEp1 and resubmit this credit.

WEc3: Water Use Reduction

POSSIBLE POINTS: 4 ATTEMPTED: 4. DENIED: 0. PENDING: 0. AWARDED: 4

06/25/2014 CONSTRUCTION PRELIMINARY REVIEW

WEp1 was recalculated based on the issues noted there, the project has reduced potable water use by 58.35%. The documentation demonstrates credit compliance for four points.

Awarded: 4

05/28/2014 DESIGN FINAL REVIEW

The clarifications for WEp1: Minimum Use Reduction-20% Reduction have been provided to address the issues outlined in the Preliminary Review. When WEp1 was recalculated based on the issues noted there, the project has reduced potable water use by 41%. The documentation demonstrates credit compliance for four points.

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Credit Form and water use calculations have been provided stating that the potable water usage in the project has been reduced by 53% from the calculated Baseline design fixture performance. A minimum reduction of 30% is required.

However, WEp1: Water Use Reduction has been denied pending clarifications.

TECHNICAL ADVICE:

Please see the comments within WEp1 and resubmit this credit.

EAp1: Fundamental Commissioning of the Awarded Building Energy Systems

08/08/2014 CONSTRUCTION FINAL REVIEW

The additional documentation demonstrates compliance.

07/10/2014 CONSTRUCTION PRELIMINARY REVIEW

The LEED Form states that fundamental commissioning is complete. However, to demonstrate compliance, the following must be addressed.

TECHNICAL ADVICE

1. Provide the executive summary of the commissioning plan including a list of the systems commissioned and the contract (signed by both parties) defining the scope of the commissioning services in progress.

2. It is unclear if all required systems have been included within the commissioning scope of work (renewable energy and interlock safety system). All applicable systems installed as part of the LEED project scope of work must be included in the commissioning process. Provide documentation showing that the systems listed above have been commissioned.

Awarded

EAp2: Minimum Energy Performance

05/28/2014 DESIGN FINAL REVIEW

The LEED Prerequisite Form has been revised to address the issues outlined in the Preliminary Review and states that the project has achieved an energy cost savings of 53.71% using the ASHRAE 90.1-2007 Appendix G methodology. Revised supporting documentation has been provided including a narrative response to Preliminary Review comments, updated simulation input and output summary files, exceptional calculations narrative, and a revised Table 1.4. Sufficient information has been provided to address most of the issues raised in the Preliminary Review.

However, two issues remain outstanding.

For future submittals, please upload a summary document that includes a narrative response to each Final Review comment, and a narrative describing any additional changes made to the energy models between review phases.

OUTSTANDING ISSUES:

1. (Preliminary Review Comment #8 and #9) The Baseline system type has not been modeled consistently with the system mapping from Table G3.1.1.A. The simulation output reports SV-A indicate that the Baseline systems have been modeled as Packaged Terminal Air Conditioning (PTAC) units. According to Table G3.1.1A, nonresidential buildings that have 3 floors or less and a floor area of less than 25,000 SF with fossil fuel heating should be modeled with System Type 3 — Packaged rooftop air conditioners (PSZ-AC). Additionally, the Baseline cooling efficiencies have not been modeled consistently with Table 6.8.1A as required. For example, the simulation output reports SV-A indicate that Baseline system AHU-1 has been modeled with a cooling capacity of 532.84 kBtuh and a cooling efficiency of 0.23 EIR or 14.8 EER whereas Table 6.8.1A indicates that systems with a cooling capacity greater than 240 kBtuh and less than 760 kBtuh should be modeled with a cooling efficiency of 10.8 EER. In this case, according to calculations performed by the reviewer, the Baseline fan powers were modeled using the correct system type and no savings has been indicated for Space Heating. Additionally, the Baseline cooling efficiencies are modeled consistently with Table 6.8.1A. Update Table G3.1.1A. Ensure that the Baseline cooling efficiencies are modeled to be consistent with Table G3.1.1A. Ensure that the Baseline cooling efficiencies are modeled to be confirm correct modeling.

2. (Preliminary Review Comment #10) The narrative states that credit for low flow fixtures has not been attempted and the energy savings associated with the service water heating are with respect to water efficiency only. However, the energy savings reported in Tables EAp2-4 and EAp2-5 are not substantiated because the service water heating efficiency difference listed in Table 1.4.5 is 15%, whereas the service water heating energy savings reported in the form is 29.44%. Partial credit has been awarded by setting the service water heating energy savings reported in 15%. For future submittals, provide detailed calculations to justify the service water heating savings reported in the form.

Due to these issues, the annual Baseline energy consumption is 346,212 kWh/year of electricity, and 18,113 therms/year of natural gas, with a Baseline energy cost of \$50,620/year. The revised Proposed energy consumption is 120,940 kWh/year of electricity, and 13.746 therms/year of natural gas, with a revised Proposed energy cost of \$23,640/year. This leads to a total percentage improvement of 53.30%, which meets prerequisite requirements.

The total predicted annual energy consumption for the project is 120,940 kWh/year of electricity, and 13.746 therms/year of natural gas.

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Prerequisite Form and supporting documentation have been provided stating that the project is new construction and therefore complies with Option 1. The form is stating that the project has achieved an energy cost savings of 52.85% using the ASHRAE 90.1-2007 Appendix G methodology. A minimum energy cost savings of 10% is required for all new construction projects. Energy efficiency measures incorporated into the building design include an improved thermal envelope, high efficiency glazing, reduced interior lighting power density, occupancy sensors, high efficiency water hot water boilers, and demand control exhaust.

However, the following thirteen review comments requiring a project response (marked as Mandatory) must be addressed for the Final Review. For the remaining review comments (marked as Optional), a project response is optional.

Please note that a new Section 1.4 input file has been developed and is available to project teams (http://www.usgbc.org/resources/eap2-section-14-tables-new-all-bdampc-projects-regardless-registration-date). This new input file will be required to be used for all projects registered after September 30, 2013. Project teams are encouraged to begin using this file before the required date.

TECHNICAL ADVICE:

REVIEW COMMENTS REQUIRING A PROJECT RESPONSE (Mandatory):

1. Please provide a narrative response to each Preliminary Review comment below and a narrative describing any additional changes made to the energy models between the Preliminary and Final Review phases not addressed by the responses to the review comments. Note that the mandatory comments are perceived to reduce the projected savings for the Proposed design. If the projected savings increase substantially in the Final submission, without implementing any optional comments that may improve performance, a narrative explanation for these results must be provided.

2. The Baseline and Proposed simulation reports have been provided in a file format which is unsupported by LEED Online (SIM). Please provide the Baseline and Proposed simulation input and output reports in one of the following file formats which are currently supported by LEED Online: DOC, PDF, ZIP, JPG, or XLS.

3. Supplemental Table 1.4 indicates that occupancy sensors are modeled in both the Baseline and Proposed Case. However, it appears that credit has been taken in spaces (Classroom B103) where occupancy sensors are required in accordance with Section 9.4.1.2. Revise the model so that spaces that are required to have occupancy sensors by ASHRAE 90.1-2007 Section 9.4.1.2 have been modeled appropriately in the Baseline and Proposed Case. Revise Table 1.4 to reflect any changes.

4. It is unclear how the automatic daylighting controls were modeled in the Proposed Case energy model. Provide a narrative describing the controls and how they are implemented in the Proposed energy model. Describe how the controls conform to Table G3.1 Paragraph 6(f). Revise the energy models, update Supplemental Table 1.4, and revise the supporting documentation as necessary.

5. It is unclear whether the minimum outside air rates (in CFM) were modeled identically in the Baseline and Proposed Case for all zones not having Demand Control Ventilation in the Proposed Case. Confirm that the minimum outside airflow (in units of cfm) was modeled identically in the Baseline and Proposed Case using the Proposed Case rates. Additionally, verify that all systems in both the Baseline and Proposed Case are modeled with zero outside air flow when fans are cycled on to meet unoccupied setback temperatures unless health or safety regulations mandate an alternate minimum flow during unoccupied periods (in which case, the unoccupied outside air rates should be modeled identically in the Baseline and Proposed Case). Provide system output report for each Baseline and Proposed Case system.

6. Pumps are reflected in the Baseline Case energy outputs, even though the Baseline Case HVAC System Type is System Type 3, which does not include an HVAC circulation loop. Provide further information to justify the pumping energy reported for the Baseline Case or revise the model as necessary to remove pumping energy.

7. It is unclear whether the Baseline Case fan air flow rates were sized based on a 20 degree F supply-air-to-room-air temperature difference for each Baseline system because the supply air and return air temperatures have not been provided. Update the model as necessary, provide input summary reports showing that the Baseline Case air flow rates were sized based on a 20 degree F supply-air-to-room-air temperature difference per G3.1.2.8, update Supplemental Table 1.4 to reflect the total Baseline Case air flow, and update the form as necessary to reflect any changes made.

8. It is unclear whether the Baseline Case has been modeled with a single packaged single zone system (System Type 3) for each thermal block as required by ASHRAE 90.1#2007 Table G3.1.7. Verify that the Baseline Case has been modeled with the same number of thermal blocks as the Proposed Case and that each Baseline Case thermal block is modeled with a separate packaged single zone system. Indicate the total Baseline cooling and heating capacities and indicate the heating and cooling efficiencies for each Baseline system type cooling capacity range consistent with the efficiencies per capacity range listed in the corresponding Tables 6.8.1A through 6.8.1G. Note that the efficiencies for each unit must be determined individually based on the capacity of each Baseline system not as a sum of all units. Provide system output report for each Baseline system.

9. It is unclear whether the Baseline cooling efficiencies have been modeled in accordance with Table 6.8.1A. For example, Table 1.4 reports that systems with cooling capacities greater than 240 kBtuh and less than 760 kBtuh have been modeled with a cooling efficiency of 9.3 EER, whereas Table 6.8.1A indicates that the cooling efficiency should be 9.8 EER for systems within this cooling capacity range. Revise the Baseline cooling efficiencies to be consistent with Table 6.8.1A, revise Table 1.4 to reflect all changes, and provide the system output report for each

Baseline system.

10. Insufficient information was provided to justify the service water heating savings. Provide additional information to justify all water heating savings. If taking credit for low-flow fixtures, be sure to provide backup water heating calculations showing the fixtures consistent with those reported in WEp1 Water Use Reduction, as well as estimations of the percentage hot water versus cold water flow, and the delta T of the DHW system, as well as the anticipated hot water temperatures at the fixtures.

11. It is unclear if all HVAC equipment has been included in the Proposed Case model. The mechanical schedules indicate the project includes ten exhaust fans, which cannot be located in the energy model documentation. Please revise the Proposed Case model as necessary to include all HVAC equipment included in the project building. If any of the exhaust fans are interlocked to operate at design conditions, these fans should also be included in the Baseline model and the Baseline fan power calculations. If any of the fans operate independently (for example, controlled by light switch or timer), these fans should be modeled identically in both design cases. Refer to the ASHRAE 90.1-2007 User's Manual for additional information. Provide system input reports to confirm correct modeling and update Table 1.4.2 to reflect all changes.

12. The energy efficiency measure for CO/NOx Sensor reset on exhaust fans has been modeled using the Exceptional Calculation methodology. However, insufficient information has been provided to confirm that the efficiency measure is not standard practice for a similar newly constructed facility. Please provide additional information to confirm that the efficiency measure is not standard practice for a similar newly constructed facility by referencing a recently published document (published within five years of the project registration date), utility program that incentivizes the equipment installed, or by documenting systems used to perform the same function in other newly constructed facilities (three facilities built within the past five years of the project registration date). Savings associated with the Proposed Case measure should also be justified with published or monitored data. It is noted that the narrative states that this measure has been accepted by the Focus On Energy Design Assistance Demand Management Program; however, no additional documentation was provided to support this.

Additionally, the simulation output reports for the exceptional calculations model have been provided in a file format which is unsupported by LEED Online (SIM). Please provide the simulation reports for the exceptional calculations model in one of the following file formats which are currently supported by LEED Online: DOC, PDF, ZIP, JPG, or XLS.

13. It is unclear whether the lighting and receptacle loads associated within storage building located to the south have been included in the Baseline and Proposed Case. Provide a detailed narrative to confirm that all lighting and receptacle loads associated with the storage building have been included in the Proposed and Baseline Case.

EAp3: Fundamental Refrigerant Management

Awarded

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Prerequisite Form has been provided stating that there are no CFC-based refrigerants in the HVAC systems which serve the LEED-NC project.

Awarded:

19

EAc1: Optimize Energy Performance POSSIBLE POINTS: 19

ATTEMPTED: 19, DENIED: 0, PENDING: 0, AWARDED: 19

07/10/2014 CONSTRUCTION PRELIMINARY REVIEW

05/28/2014 DESIGN FINAL REVIEW

Additional documentation has been provided for EAp2: Minimum Energy Performance claiming an energy cost savings of 53.71%. However, when EAp2 was recalculated based on the issues noted there, the project has demonstrated an energy cost savings of 53.30%. The documentation demonstrates credit compliance.

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Credit Form and supporting documentation have been provided stating that the project is new construction and has achieved an energy cost savings of 52.85% using the ASHRAE 90.1-2007 Appendix G methodology. A minimum energy cost savings of 12% is required for all new construction projects.

However, EAp2: Minimum Energy Performance is denied pending clarifications.

TECHNICAL ADVICE:

Please see the comments within EAp2 and resubmit this credit.

EAc3: Enhanced Commissioning POSSIBLE POINTS: 2 Not Attempted

EAc4: Enhanced Refrigerant Management Awarded: 2 POSSIBLE POINTS: 2

ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

07/10/2014 CONSTRUCTION PRELIMINARY REVIEW

05/28/2014 DESIGN FINAL REVIEW

The LEED Credit Form has been revised to address the issues outlined in the Preliminary Review comments and states that the total refrigerant impact of the LEED-NC project is 91 per ton. Refrigeration charge calculations have been provided. The documentation demonstrates credit compliance.

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Credit Form has been provided stating that the project selected refrigerants and HVACR systems that minimize or eliminate the emission of compounds that contribute to ozone depletion and global climate change. Additionally, all fire suppression systems in the LEED-NC project do not use ozone-depleting substances including CFCs, HCFCs, or halons. The refrigerant impact calculation indicates that the total refrigerant impact of the LEED-NC project is 93 per ton, which is less than the maximum allowable value of 100.

However, it is unclear how the refrigerant charge (Rc) reported in Table EAc4-1 was determined.

TECHNICAL ADVICE:

Please provide manufacturer documentation to justify the Rc values reported in Table EAc4-1.

EAc5: Measurement and Verification

Awarded: 3

ATTEMPTED: 3, DENIED: 0, PENDING: 0, AWARDED: 3

07/10/2014 CONSTRUCTION PRELIMINARY REVIEW

The LEED Form states that the project complies with Option 1 and has developed and implemented a Measurement and Verification (M&V) plan consistent with Option D: Calibrated Simulation (Savings Estimation Method) in the IPMVP Volume III: Concepts and Options for Determining Energy Savings in New Construction, April 2003.

EAc6: Green Power POSSIBLE POINTS: 2 Not Attempted

Materials and Resources

MRp1: Storage and Collection of Recyclables

Awarded

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Prerequisite Form has been provided stating that the project has provided appropriately sized dedicated areas for the collection and storage of materials for recycling, including cardboard, paper, plastic, glass, and metals. The narrative has been provided describing the size, accessibility, and dedication of recycling storage areas in the project building, as well as the expected volume and pick-up frequencies. The area is adequately sized and located. Representative floor plans and site plans have been provided highlighting recycling collection and storage areas.

MRc1.1: Building Reuse-Maintain Existing Not Walls, Floors and Roof POSSIBLE POINTS: 3 Attempted

MRc1.2: Building Reuse - Maintain 50% of Not **Interior Non-Structural Elements** Attempted POSSIBLE POINTS: 1

MRc2: Construction Waste Management Awarded: 2 **POSSIBLE POINTS: 2**

ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

08/11/2014 CONSTRUCTION FINAL REVIEW

The additional documentation provided demonstrates compliance for 97.23% construction waste diverted from landfill.

06/30/2014 CONSTRUCTION PRELIMINARY REVIEW

The LEED Form states that the project has diverted 97.23% of the on-site generated construction waste from landfill. However, to demonstrate compliance, the following must be addressed.

TECHNICAL ADVICE

1. Provide a copy of the Construction Waste Management Plan. The plan must identify the diversion goals, relevant construction debris and materials to be diverted, implementation protocols, and parties responsible for implementing the plan. Refer to the Documentation Guidance and Examples sections in the LEED BD+C v2009 Reference Guide for more information.

MRc3: Materials Reuse **POSSIBLE POINTS: 2**

Not Attempted

Awarded: 2

MRc4: Recycled Content POSSIBLE POINTS

ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

06/30/2014 CONSTRUCTION PRELIMINARY REVIEW

The LEED Form states that 22.93% of the total building materials content, by value, has been manufactured using recycled materials.

MRc5: Regional Materials

POSSIBLE POINTS: ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

06/30/2014 CONSTRUCTION PRELIMINARY REVIEW

The LEED Form states that 57.2% of the total building materials value includes materials and products that have been manufactured and extracted within 500 miles of the project site.

Awarded: 2

08/11/2014 CONSTRUCTION FINAL REVIEW

The additional documentation provided demonstrates compliance for installation of 100% certified wood.

06/30/2014 CONSTRUCTION PRELIMINARY REVIEW

The LEED Form states that 100% of the total wood-based building materials are certified in accordance with the principles and criteria of the Forest Stewardship Council (FSC). However, to demonstrate compliance, the following must be addressed.

TECHNICAL ADVICE

1. The invoice from Certified Wood Products, Inc. (dated 10/23/14 and 11/19/13) does not show the dollar value of each line item. Provide an FSC compliant vendor invoice for each product contributing toward this credit. Refer to the detailed documentation guidance outlined in the April 7, 2008 USGBC FSC Memorandum and LEED Interpretation 10296, which can be found on the USGBC website.



Indoor Environmental Quality

IEQp1: Minimum Indoor Air Quality Performance

Awarded

05/28/2014 DESIGN FINAL REVIEW

The LEED Prerequisite Form has been revised to address the issues outlined in the Preliminary Review comments. A response narrative and revised Ventilation Rate Procedure calculations have been provided. The documentation demonstrates prerequisite compliance.

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Prerequisite Form has been provided stating that the project is mechanically ventilated and mechanically conditioned; therefore, the project applies Case 1. The project has utilized the ASHRAE 62MZCalc Calculator and a narrative has been provided describing how the critical zones were selected and how all occupiable zones are accounted for in the Ventilation Rate Procedure (VRP) calculations. The ASHRAE 62MZCalc Calculator confirms that the system level outdoor air intake ventilation rates for all ventilation systems meet the minimum established in ASHRAE 62.1-2007.

However, two issues are pending:

1. Ventilation rate procedure calculations using the 62MZCalculator have been provided for units AHU-1, AHU-2, and MAU-1. However, according to the mechanical schedules, these units are 100% outdoor air systems and the multiple zone calculator is not appropriate for 100% outdoor air calculations. For example, when AHU-1 is calculated using the form calculator for single zone or 100% outdoor air systems, the minimum ventilation required is 1,976 cfm and the increased ventilation required is 2,569 cfm. While the ventilation systems as designed still comply with the minimum requirements, the units will no longer comply with the increased ventilation requirements.

2. It is unclear how the ventilation air is provided for systems AHU-1 and AHU-2. The mechanical schedules indicate that the outside air rate for AHU-1 and AHU-2 is 7,800 cfm, whereas the mechanical ductwork plans indicate that these units return 100% of the supply air (7,800 cfm), which is unusual for a 100% outdoor air system.

TECHNICAL ADVICE:

1. Please revise the ventilation rate procedure calculations for all 100% outdoor air systems to use the either the 100% outdoor air or single zone calculator in the form. Provide updated mechanical schedules as needed to reflect any changes to the design outdoor air volumes.

2. Provide a detailed narrative to clarifying the operation of AHU-1 and AHU-2, and provide revised mechanical schedules verify the minimum design outside air rates for these units. If these units operate with 100% return air, provide additional information to confirm how the spaces served by these units will meet the minimum outside air requirements established by ASHRAE 62.1-2007 during this type of operation.

IEQp2: Environmental Tobacco Smoke Awarded (ETS) Control

05/28/2014 DESIGN FINAL REVIEW

The LEED Prerequisite Form has been revised to address the issues outlined in the Preliminary Review comments. A response narrative and photographs have been provided and confirm that the signage communicates the exterior smoking policy. The documentation demonstrates prerequisite compliance.

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Prerequisite Form has been provided stating that the project minimizes exposure to ETS-containing air by prohibiting smoking on-site. Additionally, smoking is prohibited within the building. The project Owner has signed the form. Photographs confirming the signage system communicating the exterior smoking policy have been provided.

However, photographs indicate that the exterior smoking policy may not be posted in sufficient locations to account for multiple entrances to the project building. Please note that page 418 of the LEED Reference Guide for Green Building Design and Construction, 2009 Edition states that the exterior non-smoking policy must be posted for all occupants to read.

TECHNICAL ADVICE:

Please provide a response narrative and other revised documentation as necessary to confirm how the signage is posted in enough locations to communicate the exterior non-smoking policy reasonably to all occupants.

07/10/2014 CONSTRUCTION PRELIMINARY REVIEW

05/28/2014 DESIGN FINAL REVIEW

The LEED Credit Form has been revised to address the issues outlined in the Preliminary Review comments. A response narrative, floor plans, mechanical drawings, and contractor correspondence have been provided. The documentation demonstrates credit compliance.

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Credit Form has been provided stating that the project meets the credit criteria for a mechanically ventilated space. A CO2 sensor has been installed within each densely occupied space and an outdoor airflow measurement device has been installed for all systems where 20% or more of the design supply airflow services non-densely occupied spaces. These devices are programmed to generate an alarm when the conditions vary by 10% or more from the design value. Drawings confirming the location of the outdoor airflow measurement devices have been provided.

However, three issues are pending:

1. The provided plans indicate that CO2 sensors have not been installed within each densely occupied space as required. The Ventilation Rate Procedure calculations provided for IEQp1: Minimum Indoor Air Quality Performance indicate that the locker room spaces are densely occupied spaces.

2. It is unclear whether the airflow measurement devices are located in the outdoor air intakes. The drawing appears to indicate that the airflow measuring stations for AHU-1 and AHU-2 are located in the mixed air duct, which does not meet the credit requirements.

3. Insufficient information has been provided to confirm the alarm system.

TECHNICAL ADVICE:

1. Please provide documentation confirming that all spaces with a design occupant density greater than or equal to 25 people per 1000 square feet are monitored by CO2 sensors.

2. Provide additional documentation to confirm that the airflow measurement devices are located in the outdoor air intakes for each applicable mechanical ventilation system.

3. Provide additional documentation to confirm that the airflow measurement devices and CO2 sensors are programmed to generate an alarm when the conditions vary by 10% or more from the design value.

IEQc2: Increased Ventilation POSSIBLE POINTS: 1

Awarded: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

07/10/2014 CONSTRUCTION PRELIMINARY REVIEW

05/28/2014 DESIGN FINAL REVIEW

The clarifications for IEQp1: Minimum Indoor Air Quality Performance have been provided to address the issues outlined in the Preliminary Review comments. The documentation demonstrates credit compliance.

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Credit Form has been provided stating that the project AHUs are able to meet the ASHRAE 62.1-2007 outdoor air requirement and therefore applies Case 1. The project has increased breathing zone outdoor air ventilation rates to all occupied spaces by at least 30% above the minimum rates.

However, IEQp1: Minimum Indoor Air Quality Performance has been denied pending clarifications.

TECHNICAL ADVICE:

Please see the comments within IEQp1 and resubmit this credit.

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

06/30/2014 CONSTRUCTION PRELIMINARY REVIEW

The LEED Form states that the project reduces air quality problems resulting from construction to promote the comfort and well-being of construction workers and building occupants.

IEQc3.2: Construction IAQ Management Awarded: 1

Plan-Before Occupancy POSSIBLE POINTS: 1

ATTEMPTED: 1. DENIED: 0. PENDING: 0. AWARDED: 1

08/11/2014 CONSTRUCTION FINAL REVIEW

The additional documentation demonstrates compliance.

06/30/2014 CONSTRUCTION PRELIMINARY REVIEW

The LEED Form states that an Indoor Air Quality (IAQ) Management Plan was developed and implemented and that the project complies with Option 1, Path 1: Pre-occupancy flush-out. However, to demonstrate compliance, the following must be addressed.

TECHNICAL ADVICE

1. Provide a revised copy of the IAO Management Plan describing the flush-out procedure, including flush out dates. occupancy date, outdoor airflow delivery rates, internal temperature, and relative humidity. Note that, IAQ Management Plan for IEQc3.1: Construction Indoor Air Quality Management Plan — During Construction does not comply with this credit.

Awarded: 1

IEQc4.1: Low-Emitting Materials-Adhesives and Sealants POSSIBLE POINTS: 1 ATTEMPTED: 1. DENIED: 0. PENDING: 0. AWARDED: 1

08/11/2014 CONSTRUCTION FINAL REVIEW

The additional documentation demonstrates compliance.

06/30/2014 CONSTRUCTION PRELIMINARY REVIEW

The LEED Form states that all adhesive and sealant products used on the inside of the weatherproofing system and applied on-site have been included in the tables and comply with the VOC limits of the referenced standards for this credit. However, to demonstrate compliance, the following must be addressed.

TECHNICAL ADVICE

1. It is unclear whether all adhesives and sealants used on the inside of the weatherproofing system and applied onsite have been included in the table. Refer to the referenced standards of this credit and confirm whether the comprehensive list of adhesives and sealants, as defined by the referenced standards, used on the inside of the weatherproofing system and applied on-site have been included in the table. The following are common products included in this credit: flooring adhesives, subfloor adhesives, drywall and panel adhesives, wall-base adhesives, multipurpose construction adhesives, structural glazing and wood adhesives, substrate adhesives, tile adhesives, contact adhesives, architectural sealants (including grouts, and polyurethane or plastic foams), duct sealants, plumbing adhesives and sealants, wall-covering adhesives, fiberglass panel adhesives, welding adhesives, and aerosol adhesives. Refer to the South Coast Air Quality Management District (SCAQMD) South Coast Rule 1168 (effective date of July 1, 2005 and rule amendment date of January 7, 2005) for the complete list and definitions. Consult AQMD and product manufacturers for assistance in properly classifying products. Revise the form, provide additional manufacturer documentation, and include a narrative to explain any special circumstances, if necessary. Ensure that all applicable products have been included in the documentation.

IEQc4.2: Low-Emitting Materials-Paints

and Coatings POSSIBLE POINTS:

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

06/30/2014 CONSTRUCTION PRELIMINARY REVIEW

The LEED Form states that all paint and coating products used on the inside of the weatherproofing system and applied on-site have been included in the tables and comply with the VOC limits of the referenced standards for this credit.

Awarded: 1

06/30/2014 CONSTRUCTION PRELIMINARY REVIEW

The LEED Form states that all interior flooring materials meet or exceed applicable criteria for the Carpet and Rug Institute, South Coast Air Quality Management District, the California Department of Health Standard, or FloorScore; the carpet adhesives used have a VOC level of less than 50 g/L; all floor finishes meet the requirements of SCAQMD Rule 1113; and all tile setting adhesives and grout meet SCAQMD Rule 1168.

IEQc4.4: Low-Emitting Materials-Composite Wood and Agrifiber Products

Awarded: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

08/11/2014 CONSTRUCTION FINAL REVIEW

The additional documentation demonstrates compliance.

06/30/2014 CONSTRUCTION PRELIMINARY REVIEW

The LEED Form states that all composite wood and agrifiber products used on the interior of the building and all laminating adhesives used to fabricate on-site and shop-applied composite wood and agrifiber assemblies contain no added urea-formaldehyde resins. However, to demonstrate compliance, the following must be addressed.

TECHNICAL ADVICE

POSSIBLE POINTS: 1

1. Laminating adhesives have not been included in the table. Revise the form to include all laminating adhesives used to fabricate on-site and shop-applied composite wood and agrifiber assemblies. Provide additional manufacturer documentation and a narrative if necessary.

IEQc5: Indoor Chemical and Pollutant Source Control POSSIBLE POINTS: 1

Not Attempted

IEQc6.1: Controllability of Systems-Lighting POSSIBLE POINTS: 1 ATTEMPTED: 1. DENIED: 0, PENDING: 0, AWARDED: 1 Awarded: 1

07/10/2014 CONSTRUCTION PRELIMINARY REVIEW

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Credit Form has been provided stating that the project includes shared multi-occupant spaces and lighting controls have been provided for 100% of the shared multi-occupant spaces. A minimum of 100% of shared multi-occupant spaces must have lighting controls. Drawings confirming the location of shared multi-occupant spaces, including activities and types of lighting controls have been provided.

IEQc6.2: Controllability of Systems-
Thermal Comfort
POSSIBLE POINTS: 1
ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

Awarded: 1

07/10/2014 CONSTRUCTION PRELIMINARY REVIEW

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Credit Form has been provided stating that the project includes shared multi-occupant spaces and thermal controls have been provided for 100% of the shared multi-occupant spaces. A minimum of 100% of shared multi-occupant spaces must have thermal controls. The project is mechanically ventilated. Drawings confirming the location of the individual thermal controls and the location of shared multi-occupant spaces thermal controls have been provided.

07/10/2014 CONSTRUCTION PRELIMINARY REVIEW

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Credit Form has been provided stating that the mechanically ventilated and mechanically conditioned project space is in compliance with ASHRAE 55-2004. The project has utilized Load Calculation software to determine credit compliance. The metabolic rate and clothing insulation, weather design conditions, and operating conditions have been provided for both the cooling and heating mode. Local discomfort effects have been considered and calculations have been performed to limit the dissatisfied occupants to 10% or less. Supporting documentation to confirm that all design conditions fall within the ASHRAE 55-2004 acceptable ranges has been provided.

IEQc7.2: Thermal Comfort-Verification

Awarded: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

05/28/2014 DESIGN FINAL REVIEW

A revised thermal comfort survey has been provided to address the issues outlined in the Preliminary Review comments. The documentation demonstrates credit compliance.

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Credit Form has been provided stating that a permanent monitoring system and process for corrective action are in place to ensure performance to the desired comfort criteria, as determined by the credit requirements. IEQc7.1: Thermal Comfort - Design, has been earned, as required. A sample questionnaire and a narrative which identifies the party/parties responsible for conducting the survey have been provided.

However, three issues are pending:

1. The provided thermal comfort survey does not include follow-up questions to identify the nature and cause of the problem, if the respondent indicates dissatisfaction.

2. The thermal comfort survey is not anonymous, as required.

3. The questions regarding thermal comfort satisfaction are not provided in a 7-point scale format as required (from very satisfied (+3) to very dissatisfied (-3) with the center (0) signifying the neutral point).

TECHNICAL ADVICE:

1. Provide a revised survey that includes follow-up questions, which allows dissatisfied occupants to identify thermal comfort problems.

2. Provide a revised survey which allows respondents to remain anonymous.

3. Revise the survey to present the questions in a 7-point scale format.

IEQc8.1: Daylight and Views-Daylight POSSIBLE POINTS: 1

Not Attempted

IEQc8.2: Daylight and Views-Views POSSIBLE POINTS: 1 Not Attempted



Innovation in Design

IDc1.1: Innovation in Design POSSIBLE POINTS: 1 Not Attempted

IDc1.1: Exemplary Performance CWM Awarded: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

08/11/2014 CONSTRUCTION FINAL REVIEW

The additional documentation provided under MRc2: Construction Waste Management demonstrates compliance.

06/30/2014 CONSTRUCTION PRELIMINARY REVIEW

The LEED Form states that the project achieves exemplary performance for MRc2: Construction Waste Management. The requirement for exemplary performance is 95% and the project has documented 97.23%. However, the base credit has not been achieved.

TECHNICAL ADVICE

1. Refer to the comments within MRc2. Ensure that any issues noted there are addressed within the exemplary performance documentation when resubmitting this credit.

Alternatively, the project may pursue a different Innovation in Design strategy for the Final Review.

IDc1.2: Innovation in De	esign Not
POSSIBLE POINTS: 1	Attempted
IDc1.2: Innovation in De	sian Not

IDc1.2: Innovation in Design POSSIBLE POINTS: 1

Attempted

Awarded: 1

IDc1.3: EAc1 Exemplary Performance

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

07/10/2014 CONSTRUCTION PRELIMINARY REVIEW

05/28/2014 DESIGN FINAL REVIEW

The clarifications for EAc1: Optimize Energy Performance have been provided to address the issues outlined in the Preliminary Review comments. The documentation confirms that the project demonstrates a total percentage improvement of 53.30%, which meets the exemplary performance requirements. The documentation demonstrates credit compliance.

03/12/2014 DESIGN PRELIMINARY REVIEW

The LEED Credit Form has been submitted stating that the project achieves exemplary performance for EAc1: Optimize Energy Performance as specified in the LEED Reference Guide for Green Building Design and Construction, 2009 Edition. The requirement for exemplary performance in EAc1 is 50%.

However, the base credit has been marked as pending clarifications.

TECHNICAL ADVICE:

Please see the comments within EAc1. Ensure that any issues noted there are addressed within the exemplary performance documentation when resubmitting this credit. Alternatively, the project may apply for a different Innovation in Design credit for the Final Review.

IDc1.3: Innovation in Design POSSIBLE POINTS: 1 Not Attempted

Not Attempted

IDc1.4: Innovation in Design POSSIBLE POINTS: 1	Not Attempted	
IDc1.5: Innovation in Design POSSIBLE POINTS: 1	Not Attempted	
IDc1 5: Innovation in Design	Not	

IDc1.5: Innovation in Design POSSIBLE POINTS: 1

Not Attempted

Awarded: 1

IDc2: LEED® Accredited Professional

POSSIBLE POINTS: 1 ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

06/30/2014 CONSTRUCTION PRELIMINARY REVIEW

The LEED Form states that a LEED AP has been a participant on the project development team.



SSc1: Site Selection POSSIBLE POINTS: 1 ATTEMPTED: 1, DENIED: , PENDING: , AWARDED: 1

SSc4.2: Alternative Transportation-Bicycle Storage and Changing Rooms POSSIBLE POINTS: 1 ATTEMPTED: 1, DENIED: , PENDING: , AWARDED: 1

SSc6.1: Stormwater Design-Quantity Control POSSIBLE POINTS: 1 ATTEMPTED: 1, DENIED: , PENDING: , AWARDED: 1

TOTAL	109	67	3	0	64

REVIEW SUMMARY

Review	SUBMITTED	RETURNED	POINTS: SUBMITTED	DENIED	PENDINGAV	VARDED
Design Preliminary	02/04/2014	03/12/2014	50	0	41	9
Credit	STATUS	ТҮРЕ	POINTS: ATTEMPTED	DENIED	PENDINGA	WARDED
PIf1: Minimum Program Requirements	Not Approved		0	0	0	0
Plf2: Project Summary Details	Approved		0	0	0	0
Plf3: Occupant and Usage Data	Approved		0	0	0	0
PIf4: Schedule and Overview Documents	Approved		0	0	0	0
SSc1: Site Selection	Anticipated	Design	2	0	0	2
SSc4.2: Alternative Transportation-Bicycle Storage and Changing Rooms	Pending	Design	2	0	2	0
SSc4.3: Alternative Transportation-Low-Emitting and Fuel-Efficient Vehicles	Pending	Design	3	0	3	0
SSc4.4: Alternative Transportation-Parking Capacity	Anticipated	Design	2	0	0	2
SSc6.1: Stormwater Design-Quantity Control	Anticipated	Design	2	0	0	2
SSc6.2: Stormwater Design-Quality Control	Pending	Design	1	0	1	0
SSc7.2: Heat Island Effect-Roof	Pending	Design	1	0	1	0
WEp1: Water Use Reduction-20% Reduction	Pending	Design	0	0	0	0
WEc1: Water Efficient Landscaping	Pending	Design	2	0	2	0
WEc2: Innovative Wastewater Technologies	Pending	Design	2	0	2	0
WEc3: Water Use Reduction	Pending	Design	4	0	4	0
EAp2: Minimum Energy Performance	Pending	Design	0	0	0	0
EAp3: Fundamental Refrigerant Management	Anticipated	Design	0	0	0	0
EAc1: Optimize Energy Performance	Pending	Design	19	0	19	0
EAc4: Enhanced Refrigerant Management	Pending	Design	2	0	2	0
MRp1: Storage and Collection of Recyclables	Anticipated	Design	0	0	0	0
IEQp1: Minimum Indoor Air Quality Performance	Pending	Design	0	0	0	0
IEQp2: Environmental Tobacco Smoke (ETS) Control	Pending	Design	0	0	0	0
IEQc1: Outdoor Air Delivery Monitoring	Pending	Design	1	0	1	0
IEQc2: Increased Ventilation	Pending	Design	1	0	1	0
IEQc6.1: Controllability of Systems-Lighting	Anticipated	Design	1	0	0	1
IEQc6.2: Controllability of Systems-Thermal Comfort	Anticipated	Design	1	0	0	1
IEQc7.1: Thermal Comfort-Design	Anticipated	Design	1	0	0	1
IEQc7.2: Thermal Comfort-Verification	Pending	Design	1	0	1	0
IDc1.3: EAc1 Exemplary Performance	Pending	Design	1	0	1	0

Design Final	05/12/201405/	/28/2014	41	8	0	33
Credit	STATUS	TYPE	POINTS: ATTEMPTED	DENIED	PENDINGA	WARDED
Plf1: Minimum Program Requirements	Approved		0	0	0	0
Plf2: Project Summary Details	Approved		0	0	0	0
Plf3: Occupant and Usage Data	Approved		0	0	0	0
Plf4: Schedule and Overview Documents	Approved		0	0	0	0
SSc4.2: Alternative Transportation-Bicycle Storage and Changing Rooms	Anticipated	Design	2	0	0	2
SSc4.3: Alternative Transportation-Low-Emitting and Fuel-Efficient Vehicles	Denied	Design	3	3	0	0
SSc6.2: Stormwater Design-Quality Control	Anticipated	Design	1	0	0	1
SSc7.2: Heat Island Effect-Roof	Anticipated	Design	1	0	0	1
WEp1: Water Use Reduction-20% Reduction	Anticipated	Design	0	0	0	0
WEc1: Water Efficient Landscaping	Denied	Design	2	2	0	0
WEc2: Innovative Wastewater Technologies	Denied	Design	2	2	0	0
WEc3: Water Use Reduction	Anticipated	Design	4	0	0	4
EAp2: Minimum Energy Performance	Anticipated	Design	0	0	0	0
EAc1: Optimize Energy Performance	Anticipated	Design	19	0	0	19
EAc4: Enhanced Refrigerant Management	Anticipated	Design	2	0	0	2
IEQp1: Minimum Indoor Air Quality Performance	Anticipated	Design	0	0	0	0
IEQp2: Environmental Tobacco Smoke (ETS) Control	Anticipated	Design	0	0	0	0
IEQc1: Outdoor Air Delivery Monitoring	Anticipated	Design	1	0	0	1
IEQc2: Increased Ventilation	Anticipated	Design	1	0	0	1
IEQc7.2: Thermal Comfort-Verification	Anticipated	Design	1	0	0	1
IDc1.3: EAc1 Exemplary Performance	Anticipated	Design	1	0	0	1

Construction Preliminary

06/23/201407/10/2014

70 3

10 57

Credit	STATUS	ТҮРЕ	POINTS: ATTEMPTED	DENIED	PENDINGAV	VARDED
Plf1: Minimum Program Requirements	Approved		0	0	0	0
PIf2: Project Summary Details	Approved		0	0	0	0
PIf3: Occupant and Usage Data	Approved		0	0	0	0
PIf4: Schedule and Overview Documents	Approved		0	0	0	0
SSp1: Construction Activity Pollution Prevention	Pending	Construction	0	0	0	0
SSc1: Site Selection	Awarded	Design	2	0	0	2
SSc4.2: Alternative Transportation-Bicycle Storage and Changing Rooms	Awarded	Design	2	0	0	2
SSc4.3: Alternative Transportation-Low-Emitting and Fuel-Efficient Vehicles	Denied	Design	3	3	0	0
SSc4.4: Alternative Transportation-Parking Capacity	Awarded	Design	2	0	0	2
SSc6.1: Stormwater Design-Quantity Control	Awarded	Design	2	0	0	2
SSc6.2: Stormwater Design-Quality Control	Awarded	Design	1	0	0	1
SSc7.2: Heat Island Effect-Roof	Awarded	Design	1	0	0	1
WEc1: Water Efficient Landscaping	Awarded	Design	2	0	0	2
WEc2: Innovative Wastewater Technologies	Awarded	Design	2	0	0	2
WEc3: Water Use Reduction	Awarded	Design	4	0	0	4
EAp1: Fundamental Commissioning of the Building Energy Systems	Pending	Construction	0	0	0	0
EAc1: Optimize Energy Performance	Awarded	Design	19	0	0	19
EAc4: Enhanced Refrigerant Management	Awarded	Design	2	0	0	2
EAc5: Measurement and Verification	Awarded	Construction	3	0	0	3
MRc2: Construction Waste Management	Pending	Construction	2	0	2	0
MRc4: Recycled Content	Awarded	Construction	2	0	0	2
MRc5: Regional Materials	Awarded	Construction	2	0	0	2
MRc7: Certified Wood	Pending	Construction	1	0	1	0
IEQc1: Outdoor Air Delivery Monitoring	Awarded	Design	1	0	0	1
IEQc2: Increased Ventilation	Awarded	Design	1	0	0	1
IEQc3.1: Construction IAQ Management Plan- During Construction	Awarded	Construction	1	0	0	1
IEQc3.2: Construction IAQ Management Plan- Before Occupancy	Pending	Construction	1	0	1	0
IEQc4.1: Low-Emitting Materials-Adhesives and Sealants	Pending	Construction	1	0	1	0
IEQc4.2: Low-Emitting Materials-Paints and Coatings	Awarded	Construction	1	0	0	1
IEQc4.3: Low-Emitting Materials-Flooring Systems	Awarded	Construction	1	0	0	1
IEQc4.4: Low-Emitting Materials-Composite Wood and Agrifiber Products	Pending	Construction	1	0	1	0
IEOc6.1: Controllability of Systems-Lighting	Awarded	Design	1	0	0	1

IEQc6.2: Controllability of Systems-Thermal Comfort	Awarded	Design	1	0	0	1
IEQc7.1: Thermal Comfort-Design	Awarded	Design	1	0	0	1
IEQc7.2: Thermal Comfort-Verification	Awarded	Design	1	0	0	1
IDc1.1: Exemplary Performance CWM	Pending	Construction	1	0	1	0
IDc1.3: EAc1 Exemplary Performance	Awarded	Design	1	0	0	1
IDc2: LEED® Accredited Professional	Awarded	Construction	1	0	0	1

Construction Final	08/04/20140	7	0	0	7		
Credit	STATUS	ТҮРЕ	POINTS: ATTEMPTED	DENIED	PENDINGA	VARDED	
Plf1: Minimum Program Requirements	Approved		0	0	0	0	
Plf2: Project Summary Details	Approved		0	0	0	0	
Plf3: Occupant and Usage Data	Approved		0	0	0	0	
Plf4: Schedule and Overview Documents	Approved		0	0	0	0	
SSp1: Construction Activity Pollution Prevention	Awarded	Construction	0	0	0	0	
EAp1: Fundamental Commissioning of the Building Energy Systems	Awarded	Construction	0	0	0	0	
MRc2: Construction Waste Management	Awarded	Construction	2	0	0	2	
MRc7: Certified Wood	Awarded	Construction	1	0	0	1	
IEQc3.2: Construction IAQ Management Plan- Before Occupancy	Awarded	Construction	1	0	0	1	
IEQc4.1: Low-Emitting Materials-Adhesives and Sealants	Awarded	Construction	1	0	0	1	
IEQc4.4: Low-Emitting Materials-Composite Wood and Agrifiber Products	Awarded	Construction	1	0	0	1	
IDc1.1: Exemplary Performance CWM	Awarded	Construction	1	0	0	1	