April 22, 2010

Barbara A.W. Clarke, AIA, LEED AP
Drexel University Planning, Design and Construction
3201 Arch Street, Suite 320
Philadelphia, PA 19104

Regarding:
Green Globes Stage One Assessment for New Construction
Northside Dining Terrace
Drexel University
34th Street and Race Street
Philadelphia, PA 19104

Dear Ms. Clarke:

Thank you for the opportunity to conduct a third-party, Green Globes Stage I Assessment of the new Northside Dining Terrace project at Drexel University.

The Northside Dining Terrace is a one-story, 5000 square foot, steel frame addition to Kelly Hall with both brick and curtain wall façade. It was designed by EM Architecture of Philadelphia, PA. The civil engineers were Pennoni Associates, Inc. of King of Prussia, PA, and the MEP engineers were Dimitri J. Ververelli Consulting Engineers of Philadelphia, PA.

The documents we reviewed for this Assessment included the following:

- Architecture drawings A 2.01 through A 8.00, (22) drawings, dated 04-03-09, issued as “Contract Documents.”
- Civil drawings C0201 through C8001, (7) drawings, dated 04-03-09, issued as “Contract Documents.”
- Mechanical drawings M-1 through M-5, (5) drawings, dated 05-22-09, issued as “Issued for Construction.”
- Electrical drawings E-1 through E-8, (8) drawings, dated 05-22-09, issued as “Issued for Construction.”
- Plumbing drawings PF-1 through PF-2, (2) drawings, dated 05-22-09, issued as “Issued for Construction.”
- Project Manual (Specifications) dated 08-01-08
New Construction Stage I Assessment

Overall, the building appears to have integrated green design features as a result of good design practices. Our preliminary assessment is that you should receive a One (1) Green Globe Rating if you continue through a Phase II Site Assessment and provide the documentation necessary to verify some of the items listed within the Stage I Assessment.

Stage I of a New Construction (NC) Assessment is a review of documentation of the design of the facility and includes but is not limited to: construction documents, landscape designs, water and energy analysis, life cycle cost documentation, commissioning reports, and other design considerations.

In the case of the Northside Dining Terrace, the design of the project as shown in the construction documents was reviewed based upon your online application submitted to the Green Globes web site. Online information entered for the Construction Document Stage was used for the Stage I Assessment of the design.

The Stage I Assessment indicates whether the building appears to be on target to achieving a certified rating. It also indicates any additional information needed prior to or at the time of Stage II of the third-party assessment. Normally after construction, the Stage II assessment can be completed. It includes an onsite walk through, review of additional documentation that may have been missing in the Stage I Assessment or not available until the construction phase of the project, and interview of key team members. For more information regarding the Stage II Assessment, please consult the pre-assessment checklist on the Green Building Initiative website (www.thegbi.org) accessed through your project login.

The online application for Northside Dining Terrace listed the Overall Rating at a 48% (419 points scored out of 882 available). However we found areas where points were applied for but could not be verified in the Construction Documents. There are (87) points in this category, which, if left unverified would still maintain the building rating of One (1) Green Globe.

We also found areas where points are verifiable but not applied for in the application. There are (97) points in this category.

Assuming all points currently claimed can be verified during the Stage II Assessment, and verifiable points are applied for, your present score could increase to 59% (516 points scored out of 882 available). A Two Green Globes Rating requires a minimum compliance level of 55% which means you are likely to achieve the Two Green Globes Rating. This projected rating assumes that all points recommended being applied for are applied for and the points that were applied for but could not be verified in the Construction Documents are verified at the Stage II Assessment.
Following is a Section-by-Section discussion of the points verifiable but not applied for as well as points which were applied for but could not be verified in the Construction Documents Stage. Only the points which need either to be further defined or to be applied for are discussed. If the point is not mentioned below, the Stage One Assessment essentially agrees with the answers provided by the design team to the various questions.

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<thead>
<tr>
<th>Section</th>
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<tbody>
<tr>
<td>Project Management</td>
<td>Commissioning requirements are included in the Construction Documentation.</td>
<td>Yes</td>
<td>There were no commissioning requirements listed in the CD’s. This could deduct (3) points from your evaluation score.</td>
<td>Submit the commissioning requirements for review.</td>
</tr>
<tr>
<td>Site</td>
<td>Will at least 35% of impervious surfaces be shaded - preferably with trees, shrubs or vines?</td>
<td>Yes</td>
<td>There was no landscaping plan in the CD’s. This could deduct (7) points from your evaluation score.</td>
<td>Submit the landscaping plans for review.</td>
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<tr>
<td>Site</td>
<td>Do the construction documents specify measures to reduce heat build-up on the roof, either by using high-albedo roofing materials (reflectance of at least 0.65 and emissivity of at least 0.9) for a minimum of 75% of the roof surface, or by constructing a green roof, or by a combination of both high-albedo materials and green roof?</td>
<td>No</td>
<td>A high-albedo roof was specified but the reflectance and emissivity requirements were missing from the specification. This could add (7) points to your evaluation score.</td>
<td>Submit manufacturer’s documentation or an approved submittal for the roofing material that was actually installed, showing a reflectance of at least 0.65 and emissivity of at least 0.9, for review.</td>
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<tr>
<td>Site</td>
<td>Does the landscape plan create/preserve natural core and corridors and/or specify a naturalized landscape using native trees, shrubs and ground cover, with minimal lawn?</td>
<td>Yes</td>
<td>There was no landscaping plan in the CD’s. This could deduct (20) points from your evaluation score.</td>
<td>Submit the landscaping plans for review.</td>
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<tr>
<td>Energy</td>
<td>Have the energy performance targets been achieved?</td>
<td>No answer; left blank</td>
<td>Submission of an energy model could add up to 100 points to your evaluation score.</td>
<td>Submit an energy model to evaluate whether the projected energy consumption meets or exceeds the energy-use targets. Further simulations and results verifications should be done using more sophisticated tools such as the EQuest or DOE 2.0 programs</td>
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<tr>
<td>Energy</td>
<td>Is window glazing which optimizes daylight (high visible transmittance (VT)) specified?</td>
<td>No answer; left blank</td>
<td>Answering “yes” here could add (2) points to your evaluation score.</td>
<td>Revise answer to “yes.”</td>
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<tr>
<td>Energy</td>
<td>Indicate the VT value:</td>
<td>No answer; left blank</td>
<td>Specification section 088000-12, page 3, paragraph 3.9.A calls for a VT of 0.7. This could add (8) points to your evaluation score.</td>
<td>Revise answer to “0.7.”</td>
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<td>Energy</td>
<td>Is electrical lighting integrated with day lighting, taking into account daily and seasonal variations?</td>
<td>Yes</td>
<td>Electrical drawings do not appear to require that this type of integration is required. This could deduct (10) points from your evaluation score.</td>
<td>Submit an approved submittal for the lighting control that will actually be installed, indicating that day lighting and electrical lighting are integrated, for review.</td>
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<tr>
<td>Energy</td>
<td>Indicate the R value for walls:</td>
<td>No answer; left blank</td>
<td>Wall section #1 on drawing A 3.21 appears to indicate insulation in the walls. This could add (4) points from your evaluation score.</td>
<td>Indicate the R value for insulation in walls on drawing A3.21.</td>
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<tr>
<td>Energy</td>
<td>Indicate the R value for the roof:</td>
<td>No answer; left blank</td>
<td>Wall section #1 on drawing A 3.21 appears to indicate insulation on the roof deck. This could add (4) points from your evaluation score.</td>
<td>Indicate the R value for insulation on the roof on drawing A3.21.</td>
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<td>Energy</td>
<td>Do the construction documents indicate window glazing with a low U factor and window treatments that enhance interior thermal comfort?</td>
<td>No answer; left blank</td>
<td>Construction documents appear to indicate window glazing with a low U factor and window treatments that enhance interior thermal comfort. This could add (2) points from your evaluation score.</td>
<td>Revise answer to “yes.”</td>
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<tr>
<td>Energy</td>
<td>Indicate the U value for the glazing:</td>
<td>No answer; left blank</td>
<td>Specification section 088000-12, page 3, paragraph 3.9.C calls for a U value of 0.29/0.26. This could add (8) points to your evaluation score.</td>
<td>Revise answer to “0.29/0.26.”</td>
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<tr>
<td>Energy</td>
<td>Will major energy uses be sub-metered?</td>
<td>Yes</td>
<td>These points are not available to buildings below 50,000 s.f. floor area and (5) points should be deducted from your evaluation score.</td>
<td>Revise answer to “N/A.”</td>
</tr>
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<td>Energy</td>
<td>Is the building’s energy efficiency increased through the use of the following energy-efficient equipment: Energy-efficient hot water service systems</td>
<td>No answer; left blank</td>
<td>The plumbing plans appear to specify an energy-efficient hot water service system. This could add (6) points to your evaluation score.</td>
<td>Revise answer to “yes.”</td>
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<td>Energy</td>
<td>Is the building’s energy efficiency increased through the use of the following energy-efficient equipment: Variable speed drives</td>
<td>No answer; left blank</td>
<td>The mechanical plans appear to require a constant volume system. Supply, exhaust and makeup air could easily be converted to variable speed and save significant energy. This could add (6) points to your evaluation score.</td>
<td>Revise HVAC design to utilize variable speed controls on RTU-1, EF-1 and MUA-1.</td>
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<tr>
<td>Energy</td>
<td>Is the building’s energy efficiency increased through the use of the following energy-efficient equipment: high-efficiency motors</td>
<td>No answer; left blank</td>
<td>High efficiency motors appear to be required by the mechanical plans. This will add (6) points to your evaluation score.</td>
<td>Revise answer to “yes.”</td>
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<tr>
<td>Energy</td>
<td>Will there be safe, covered storage areas with fixed mountings to secure bicycles against theft?</td>
<td>Yes</td>
<td>Bicycle storage areas do not appear to be part of the project. This could deduct (10) points from your evaluation score.</td>
<td>Revise answer, or demonstrate how bicycle storage areas are included in the project scope.</td>
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<tr>
<td>Energy</td>
<td>Will there be changing facilities for building tenants and staff?</td>
<td>Yes</td>
<td>Changing facilities for building tenants and staff do not appear to be part of the project. This could deduct (10) points from your evaluation score.</td>
<td>Revise answer, or demonstrate how changing facilities for building tenants and staff are included in the project scope.</td>
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<td>Water</td>
<td>Does the design include the following water-efficient equipment?</td>
<td>Yes</td>
<td>Low-flush toilets do not appear to be specified on drawing PF-2. This could deduct (4) points from your evaluation score.</td>
<td>Submit an approved submittal for the toilets that were actually installed, indicating that all toilets are low-flush, for review.</td>
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<td>Low-flush toilets (less than 1.6 gallons per flush)</td>
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<td>Low-flush toilets do not appear to be specified on drawing PF-2. This</td>
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<td>could deduct (4) points from your evaluation score.</td>
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<td>Water-saving fixtures on faucets (2.0 gallons/min) do not appear to be</td>
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<td>be specified on drawing PF-2. This could deduct (4) points from your</td>
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<td>Water-saving fixtures on faucets (2.0 gallons/min) that were actually</td>
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<td>installed, for review.</td>
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<td>Water-sensing devices or proximity detectors on urinals do not</td>
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<td>appear to be specified on drawing PF-2. This could deduct (4) points</td>
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<td>from your evaluation score.</td>
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<td>actually installed, for review.</td>
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<td>Resources, Building</td>
<td>Describe the materials and assemblies that have been specified for their</td>
<td>No answer; left blank</td>
<td>Because the previous question was answered “Yes,” providing this level of detail could add (2) points to your evaluation score.</td>
<td>Revise the answer.</td>
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<td>Materials, and Solid Waste</td>
<td>durability and low maintenance:</td>
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<td>Resources, Building Materials, and Solid Waste</td>
<td>Describe the main features that promote building adaptability:</td>
<td>No answer; left blank</td>
<td>Because the previous question was answered “Yes,” providing this level of detail could add (3) points to your evaluation score.</td>
<td>Revise the answer.</td>
</tr>
<tr>
<td>Resources, Building Materials, and Solid Waste</td>
<td>Indicate how much storage area will be provided for storing recyclable waste:</td>
<td>No answer; left blank</td>
<td>Because the previous question was answered “Yes,” providing this level of detail could add (5) points to your evaluation score.</td>
<td>Revise the answer.</td>
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<tr>
<td>Emissions</td>
<td>Are low NOx boilers and furnaces specified?</td>
<td>No</td>
<td>The drawings and specifications do appear to require low NOx emissions for the boilers. This could add (15) points to your evaluation score.</td>
<td>Submit an approved submittal for the boilers that were actually installed, indicating that they are low NOx emitters.</td>
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<tr>
<td>Emissions</td>
<td>Do the construction documents indicate that the building’s air conditioning system complies with the requirements of ASHRAE 15-1994?</td>
<td>N/A</td>
<td>Compliance with ASHRAE 15-1994 for this system can be demonstrated. This could add (5) points to your evaluation score.</td>
<td>Revise answer.</td>
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<td>Indoor Environment</td>
<td>Air intakes will be located more than 60 feet from major sources of pollution and at least the minimum recommended distances from lesser sources of pollution.</td>
<td>Yes</td>
<td>The outdoor air intake of RTU-1 appears to be located within 8'-0&quot; of the exhaust fan EF-1. This could deduct (3) points from your evaluation score.</td>
<td>Revisit the orientation of RTU-1 with regard to the exhaust fan. Provide results at the Stage II Assessment.</td>
</tr>
<tr>
<td>Indoor Environment</td>
<td>Do the construction documents specify a MERV of at least 13 for air distributed to occupied spaces?</td>
<td>No</td>
<td>The project requirements for RTU-1 could include MERV 13 filtration. This could add (5) points to your evaluation score.</td>
<td>Revisit the filtration requirements for RTU-1. Provide results at the Stage II Assessment.</td>
</tr>
<tr>
<td>Indoor Environment</td>
<td>Describe the measures to prevent mold:</td>
<td>No answer; left blank</td>
<td>Because the previous question was answered “Yes,” providing this level of detail could add (5) points to your evaluation score.</td>
<td>Revise the answer.</td>
</tr>
<tr>
<td>Indoor Environment</td>
<td>Describe the measures to mitigate indoor pollution at source:</td>
<td>No answer; left blank</td>
<td>Because the previous question was answered “Yes,” providing this level of detail could add (3) points to your evaluation score.</td>
<td>Revise the answer.</td>
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<td>Indoor</td>
<td>Do the construction documents demonstrate that the domestic hot water system is designed to prevent the occurrence of Legionella?</td>
<td>Yes</td>
<td>The hot water system operating temperature does not appear to be included in the construction documents.</td>
<td>Revisit hot water system operating temperature on the construction documents. Provide results at the Stage II Assessment.</td>
</tr>
<tr>
<td>Indoor</td>
<td>Will the building achieve a minimum daylight factor of 0.2 for a partially lit work place or living/dining area, or 0.5 for a well-lit work area?</td>
<td>No</td>
<td>Considering the amount of natural light that will be afforded by the southern-exposure glazing, these points seem achievable. This could add (5) points to your evaluation score.</td>
<td>Revise answer.</td>
</tr>
<tr>
<td>Indoor</td>
<td>Do the construction documents specify solar shading devices to enable occupants to control brightness from direct daylighting?</td>
<td>Yes</td>
<td>We could not locate occupant controlled shading devices on the construction documents. This could deduct (5) points from your evaluation score.</td>
<td>Revise answer, or demonstrate how solar shading devices to enable occupants to control brightness are included in the project scope.</td>
</tr>
<tr>
<td>Indoor</td>
<td>Do the construction documents include noise attenuation of the structural systems, and measures to insulate primary spaces from impact noise?</td>
<td>Yes</td>
<td>We could not locate noise attenuation of the structural systems, and measures to insulate primary spaces from impact noise on the construction documents. This could deduct (2) points from your evaluation score.</td>
<td>Revise answer, or demonstrate how noise attenuation of the structural systems and measures to insulate primary spaces from impact noise are included in the project scope.</td>
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</table>
You are well on the way to having a Green Globes certified building. If all of the design parameters verified during this Stage I Assessment are installed and in place at the end of construction, after the Stage II Assessment you should receive a Two Green Globe rating for this Dining Terrace. Congratulations.

We hope to have the opportunity to meet you on site for a Stage II Assessment. During that Assessment, please have available for review, the Action Items listed in the above table. Attached please find a copy of the Green Globes report generated by the Web site based upon your answers to the online survey application. If you have any questions or require additional information, please do not hesitate to contact me at (404) 789-2716. We look forward to working with you through the finalization of the Green Globes rating process.

Sincerely,

Michael K. O’Brien, PE, LEED AP
cc: Kristi Martin, The Green Building Initiative