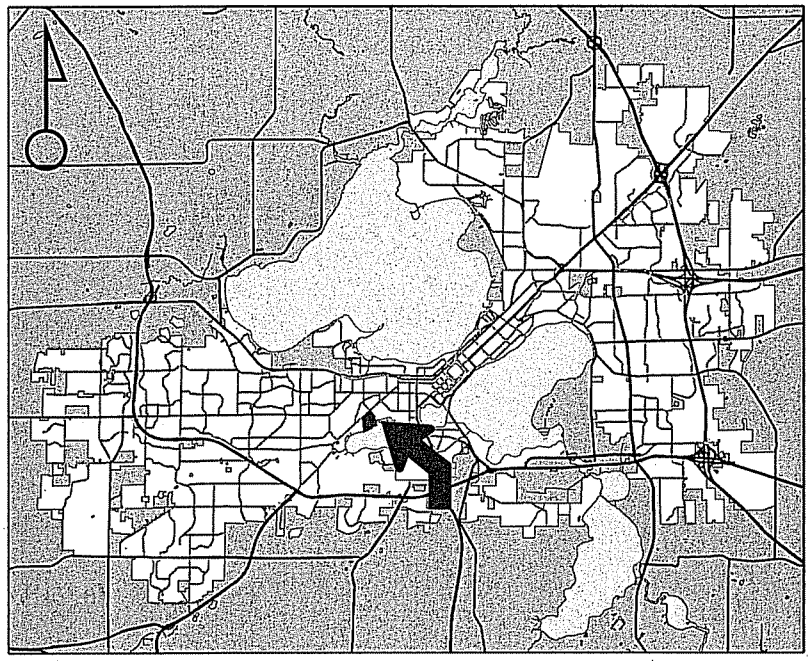
City of Madison

Proposed Conditional Use



Location
945 Edgewood College Drive

Project Name
Regina Hall Additions & Alterations

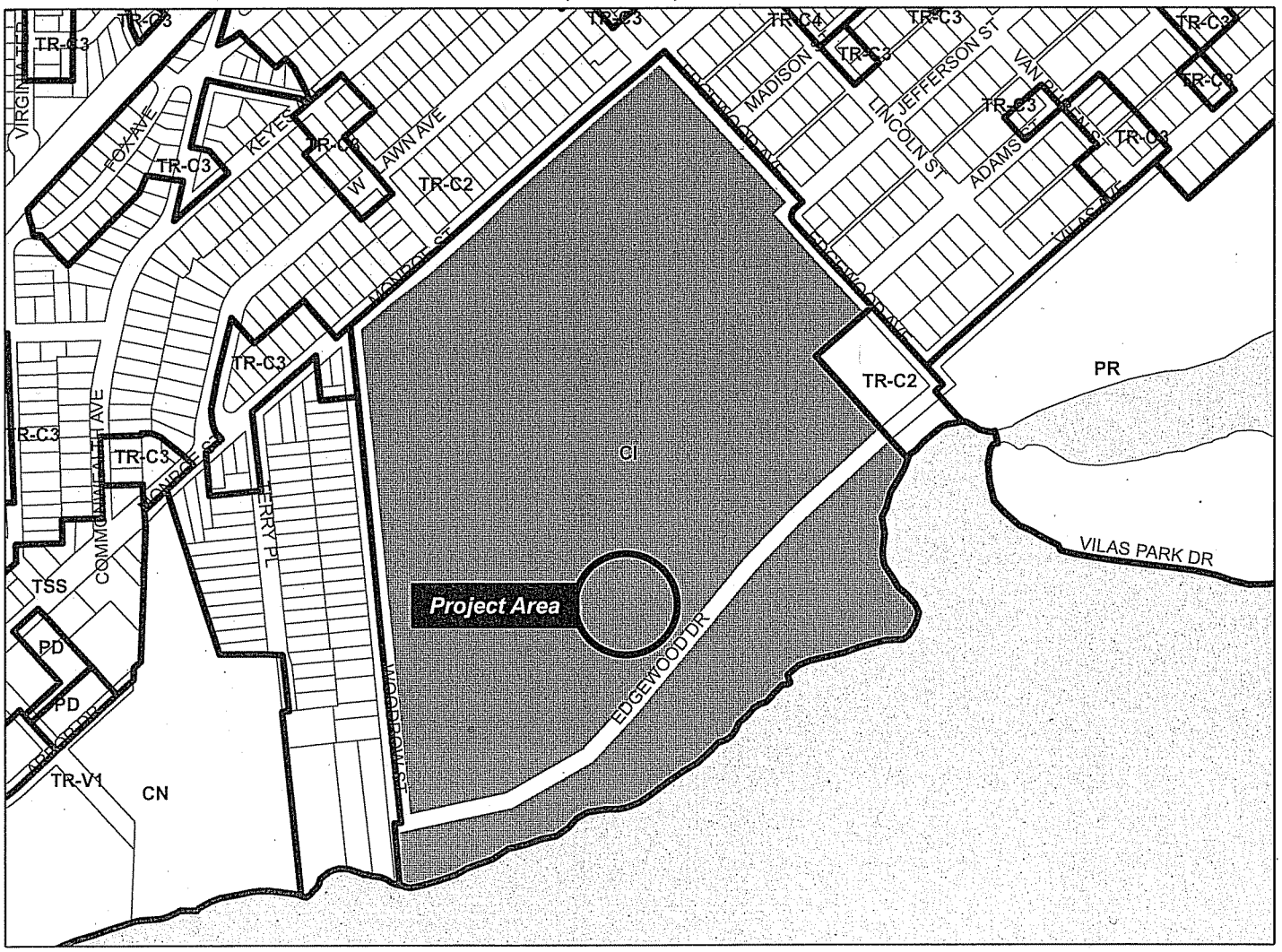
Applicant
Edgewood College/
Michael Gordon - Potter Lawson, Inc.

Existing Use
Edgewood College Dormitory

Proposed Use
Construct addition to existing dormitory for Edgewood College (Regina Hall)

Public Hearing Date
Plan Commission
10 March 2014

For Questions Contact: Tim Parks at: 261-9632 or tparks@cityofmadison.com or City Planning at 266-4635



Scale : 1" = 500'

City of Madison, Planning Division : RPJ : Date : 26 February 2013

City of Madison

945 Edgewood College Drive

Date of Aerial Photography : Spring 2013

LAND USE APPLICATION

CITY OF MADISON

215 Martin Luther King Jr. Blvd; Room LL-100
PO Box 2985; Madison, Wisconsin 53701-2985
Phone: 608.266.4635 | Facsimile: 608.267.8739

- All Land Use Applications should be filed with the Zoning Administrator at the above address.
- The following information is required for all applications for Plan Commission review except subdivisions or land divisions, which should be filed using the Subdivision Application.
- This form may also be completed online at: www.cityofmadison.com/developmentcenter/landdevelopment

FOR OFFICE USE ONLY:
Amt. Paid ~ Receipt No. _____
Date Received 11/22/14
Received By JK
Parcel No. 0709-272-0103-1
Aldermanic District 13-Sue Ellingson
Zoning District CI
Special Requirements HistL, IV, UDD 9&
Review Required By:
☐ Urban Design Commission ☑ Plan Commission
☐ Common Council ☐ Other: _____

Form Effective: February 21, 2013

1. Project Address: 945 Edgewood College Drive (existing building)
Project Title (if any): Regina Hall Addition and Alterations

2. This is an application for (Check all that apply to your Land Use Application):

- ☐ **Zoning Map Amendment from** _____ to _____
- ☐ **Major Amendment to Approved PD-GDP Zoning** ☐ **Major Amendment to Approved PD-SIP Zoning**
- ☐ **Review of Alteration to Planned Development (By Plan Commission)**
- ☑ **Conditional Use, or Major Alteration to an Approved Conditional Use**
- ☑ **Demolition Permit**
- ☐ **Other Requests:** _____

3. Applicant, Agent & Property Owner Information:

Applicant Name: Michael Gordon Company: Potter Lawson, Inc.
Street Address: 749 University Row, Suite 300 City/State: Madison, WI Zip: 53705
Telephone: (608) 274-2741 Fax: (___) None Email: mikeg@potterlawson.com

Project Contact Person: Michael Gordon Company: Potter Lawson, Inc.
Street Address: 749 University Row, Suite 300 City/State: Madison, WI Zip: 53705
Telephone: (608) 274-2741 Fax: (___) none Email: mikeg@potterlawson.com

Property Owner (if not applicant): Edgewood College
Street Address: 1000 Edgewood College Drive City/State: Madison, WI Zip: 53711

4. Project Information:

Provide a brief description of the project and all proposed uses of the site: This addition will be a residence hall for 126 students (floors 1-3) plus college functions on the lower level. Partial demolition of the existing building will result in a net increase of 114 beds.

Development Schedule: Commencement May, 2014 Completion July, 2015

5. Required Submittal Information

All Land Use applications are required to include the following:

☑ **Project Plans** including:*

- Site Plans (fully dimensioned plans depicting project details including all lot lines and property setbacks to buildings; demolished/proposed/altered buildings; parking stalls, driveways, sidewalks, location of existing/proposed signage; HVAC/Utility location and screening details; useable open space; and other physical improvements on a property)
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- Landscape Plan (including planting schedule depicting species name and planting size)
- Building Elevation Drawings (fully dimensioned drawings for all building sides, labeling primary exterior materials)
- Floor Plans (fully dimensioned plans including interior wall and room location)

Provide collated project plan sets as follows:

- ***Seven (7) copies*** of a full-sized plan set drawn to a scale of 1 inch = 20 feet (folded or rolled and stapled)
- ***Twenty Five (25) copies*** of the plan set reduced to fit onto 11 X 17-inch paper (folded and stapled)
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☑ **Letter of Intent: Provide one (1) Copy per Plan Set** describing this application in detail including, but not limited to:

- Project Team
- Existing Conditions
- Project Schedule
- Proposed Uses (and ft^2 of each)
- Hours of Operation
- Building Square Footage
- Number of Dwelling Units
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- Estimated Project Cost
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No filing fee (not for profit organization)

☑ **Electronic Submittal:** All applicants are required to submit copies of all items submitted in hard copy with their application as Adobe Acrobat PDF files on a non-returnable CD to be included with their application materials, or by e-mail to *pcapplications@cityofmadison.com*.

☐ **Additional Information** may be required, depending on application. Refer to the Supplemental Submittal Requirements.

6. Applicant Declarations

☑ **Pre-application Notification:** The Zoning Code requires that the applicant notify the district alder and any nearby neighborhood and business associations **in writing** no later than **30 days prior to FILING this request**. List the alderperson, neighborhood association(s), and business association(s) AND the dates you sent the notices:
Susan Ellingson (12/20/13). Dudgeon Monroe & Vilas Neighborhood Associations (12/9/13).

→ If a waiver has been granted to this requirement, please attach any correspondence to this effect to this form.

☑ **Pre-application Meeting with Staff:** Prior to preparation of this application, the applicant is required to discuss the proposed development and review process with Zoning and Planning Division staff; note staff persons and date.

Planning Staff: D.A.T meeting *Date:* 12/12/13 *Zoning Staff:* D.A.T meeting *Date:* 12/12/13

The applicant attests that this form is accurately completed and all required materials are submitted:

Name of Applicant Michael Guns Relationship to Property: Vice President of Business and Finance

Authorizing Signature of Property Owner [signature] Date 01-21-14

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Conditional Use & Demolition Permit Application

Regina Hall Addition and Alterations

Edgewood College

Potter Lawson No. 2013.17.00
January 22, 2014

Potter Lawson
Success by Design

TABLE OF CONTENTS

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SECTION ONE

Letter of Intent
Project Directory

Potter Lawson
Success by Design

January 22, 2014

City of Madison Plan Commission
Department of Planning
210 Martin Luther King. Jr. Blvd
Madison, WI 53710

Re: **Letter of Intent**
Regina Hall – Addition and Alterations, Edgewood College
945 Edgewood College Drive
Madison, WI 53711
Potter Lawson Project No. 2013.17.00

Dear Plan Commission members and City Staff:

Attached is the application for a City of Madison Conditional Use Permit and Demolition Permit for the construction of a dormitory addition on the Edgewood College Campus. Edgewood Inc., the owner of the property, seeks a Demolition Permit and a Conditional Use Permit for a major Alteration of an Existing Conditional Use. The demolition is limited to removal of approximately 27 ft. off the eastern end of the existing building.

The campus Master Plan was recently submitted to the City. Campuses like Edgewood can follow a different City approval path when they have a master plan in place. However, because this plan has not been implemented, the Regina Addition must follow the traditional City Conditional Use review and approval process.

Master Plan and Existing Site
This project has been a part of the Edgewood Campus Plan since 1996. The existing site lies to the Northeast of Regina hall, and is flanked by the Edgedome to the Northwest and by the Campus School to the Northeast. To the southeast and southwest of the addition are effigy mounds, and further to the southeast is the Park and Pleasure Drive.

Building Site Design
The building addition is located in the center of the campus at the Northeast end of the existing Regina Hall. This project will add to a central component of the Edgewood Campus which will reduce the impact of this project to the surrounding neighborhoods. The building form lends to creating a new entrance to overall building and courtyard / outdoor gathering space for the students. A new Fire Department Aerial Equipment Access Lane will be added to improve accessibility for emergency personnel. The building is set back approximately 77 ft. from the Park and Pleasure Drive, in accordance with the proposed Master Plan. Some of the larger trees on the site will be preserved. Other trees that that must be removed have assessed by the College. Some of the removed trees will be replanted on the campus while others will be cut down and stored for future use.

The plans show an addition to the east of the existing trash enclosure on the north end of the existing Regina Hall. The College has discussed a new approach to collection in order to reduce truck traffic to the center of the campus. If the new approach is approved, it will not be necessary to expand the trash enclosure.

Facility Need and Use
Edgewood College would like to increase the number of students living on campus. Their goal is to have a total of 800 beds on campus; this addition will add an additional 114 beds to bringing their total bed count to 670. The campus is also in need of large flexible spaces. This facility will add multi-purpose space and 3 flexible classrooms that can be combined into one larger space. Both of these spaces will be located in the basement and be accessible to the entire campus.

Building Design
The proposed building is approximately 43,900 gsf and will be 4 stories including a basement. The exterior is designed to respond directly to its context, in particular the existing Regina Hall. The addition runs perpendicular to the existing Regina Hall and it will result in the removal of 12 existing beds from the original building. The removal of these beds is required in order to economically construct the addition and maintain a reasonable clear distance from the Campus School. A welcoming courtyard is formed from this addition and defines a new entrance for the addition and the existing portions of Regina Hall.

On each residence floors there will be lounges in the center and the south end. The student rooms are designed to hold 2 students per room, and clusters are created around each of three bathrooms on each floor. The basement is intended for campus use. There will be large and flexible spaces so that the building will be a common asset to the campus community.

Sustainability
The project is working with Focus on Energy in order to set up strategies to reduce energy consumption and reduce the impact of the construction on the environment.
Some of these strategies include:

- Improved Building Envelop System(s)
- Improved Glazing System(s)
- Improved Lighting System(s)
- Improved HVAC System(s)

Neighborhood Review Process
The Regina addition and alterations were displayed at a neighborhood open meeting on December 10, 2013. The Master plan was also reviewed at this meeting. The Edgewood Neighborhood Liaison Committee met on January 14, 2014, to review the project. Notices to the alderperson and neighborhood were distributed no less than 30 days prior to the submittal date.

Madison Landmarks Commission
The building footprint, utility extensions and construction activity for the Regina Hall Addition will be near the Edgewood College Mound Group. Buffer areas for the nearest mounds are delineated on the Site Survey. We have been in contact with Amy Scanlon, City Preservation Planner, and intend to meet with the Landmarks Commission in the near future.

We have also reviewed the project with staff at the Wisconsin Historical Society. This project will also need a compliance review from them and the DNR. A separate consultant is in the process of preparing materials for their review.

We respectfully submit this conditional use and demolition permit application for your review. We look forward to receiving staff comments in the near future and meeting with the Plan Commission on March 10th.

Sincerely,

POTTER LAWSON INC.

Michael D. Gordon, AIA, LEED AP
Senior Vice President

Potter Lawson
Success by Design

Project Directory

Project Name: Regina Hall Addition and Alteration
Edgewood College

Project Number: 2013.17.00

Owner
Edgewood College
1000 Edgewood College Dr.
Madison, WI 53711
608/663-4861

Michael Guns, VP of Business and Finance
MGuns@edgewood.edu
608/663-6714

Maggie Balistreri-Clarke, VP for Student Development/
Dean of Students
balistr@edgewood.edu
608/663-2212

Susan Serrault, Director of Facilities Operations
sserrault@edgewood.edu
608/663-2255

Architect
Potter Lawson
749 University Row, Suite 300
Madison, WI 53705
608/274.2741

Doug Hursh, dough@potterlawson.com

Mike Gordon, mikeg@potterlawson.com

Andy Laufenberg, andrewl@potterlawson.com

John Dreher, Electrical Engineer, johnd@potterlawson.com

Patti McGinnis, Interior Designer,
patriciam@potterlawson.com

Plumbing, Fire Protection, HVAC
KJWW Engineering Consultants, P.C.
802 West Broadway, Suite 312
Madison, WI 53713-1839
(608) 223-9600

Kris Cotharn, cotharnka@kjww.com
608/221-6713

Paul Hansen, hansenpp@kjww.com
608/221-6743 M 608/509-2885

Civil Engineer and Landscape Architect
SAA Design Group, Inc.
101 E Badger Road
Madison, WI 53713
608/255-0800

John Lichtenheld, Civil Engineer,
jlichtenheld@saa-madison.com

Patrick Hannon, Landscape Architect,
phannon@saa-madison.com

Structural Engineers
Pierce Engineers, Inc.
10 West Mifflin Street, Suite 205
Madison, WI 53703
(608) 256-7304

Kurt Frey, kdf@pierceengineers.com
608/729-1404

Brian Riewestahl, bjr@pierceengineers.com
608/256-7304, x 208

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SECTION TWO

Notification to Neighborhood Association
(Meeting Date: Dec. 10, 2013)
Agenda
(Dec. 10, 2013)
Notification to Alderperson of Project
(Dec. 20, 2013)

From: Maggie Balistreri-Clarke
Sent: Monday, December 09, 2013 5:14 PM
To: Alder 13 (district13@cityofmadison.com); Anna McManus; Cristie Jacobs; Daryl Sherman ; dpoland@gklaw.com; Michael Elliott; Erin Bykowski; Bob Growney; huberma@chorus.net; Joyce Wodka; Jon standridge; Kathleen Malone; Maggie Balistreri-Clarke; Melissa Mael; Michael Guns; Michael Metcalf; Shannon McDonough; shawnschey@yahoo.com; Susan Serrault; Thomas Huber; Tom Turnquist (tomturnquist@yahoo.com)
Cc: Daniel Carey; Scott Flanagan; dough@potterlawson.com; John Lichtenheld (jlichtenheld@saa-madison.com); Melissa Mael
Subject: Prep for Open Meeting

Friends,
I am looking forward to seeing you at the open meeting tomorrow in the **Washburn Heritage Room of Regina Hall at 6:00 pm.**

I will attach 3 documents in preparation for that meeting – the agenda, the updated graphic and the updated building summary. I will list the updates that have been made to the graphic at the end of the email. The building summary now includes the addition to the parking structure and the curb cut on Edgewood Avenue. I will request that these be posted on the web site as soon as I hit 'send'.

The agenda reflects our structure of introductory panel, discussion tables, large group review of major questions. I am hopeful that each table will have at least one resource person whose job it will be to collect the question cards, give information as they have it and then report back on any major unanswered questions or concerns.

Here are my suggestions for specific resource folks:
- Site #1 – Shawn and Daryl
- East end/ res halls, P and P Drive – Doug P, Jon and Tom
- Storm water/ traffic/ landscaping – SAA, Susan Serrault, Erin Bykowski, Mike Metcalf
- Building plans, uses, massing, approval process – Doug Hursh, Michael Guns
- Regina Expansion – Potter Lawson rep/ Michael Guns
- Other –Scott Flanagan, S. Kathleen Malone, Mike Elliott, Sue Ellingson

I plan to be a 'floater' and serve as a resource for whichever table could use a hand. Please let me know if you have other suggestions for how to organize ourselves for a productive meeting. Missy is working hard to prepare posters on the enrollment table, res hall occupancy table and the architectural design committee.

Please let me know if you have questions or if I've missed anything . Thanks SO much for your tremendous partnership!! Maggie

Changes to the graphic:
- Addition to parking structure 9a.
- Indian mound colored in
- Sidewalk on our side of campus
- Curb cuts identified
- Entrance to campus school put in

Maggie Balistreri-Clarke
Vice President for Student Development/Dean of Students
Edgewood College
Madison, WI 53711
(608) 663 - 2313

Building Design
The proposed building is approximately 43,900 gsf and will be 4 stories including a basement. The exterior is designed to respond directly to its context, in particular the existing Regina Hall. The addition runs perpendicular to the existing Regina Hall and it will result in the removal of 12 existing beds from the original building. The removal of these beds is required in order to economically construct the addition and maintain a reasonable clear distance from the Campus School. A welcoming courtyard is formed from this addition and defines a new entrance for the addition and the existing portions of Regina Hall.

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Sincerely,

POTTER LAWSON INC.

Michael D. Gordon, AIA, LEED AP
Senior Vice President

Potter Lawson
Success by Design

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Edgewood College

Project Number: 2013.17.00

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608/729-1404

Brian Riewestahl, bjr@pierceengineers.com
608/256-7304, x 208

NEIGHBORHOOD OPEN MEETING –
Edgewood Schools Campus Master Plan - December 10, 2013

Welcome and Introductions	Sue Ellingson, District 13 Alder
Karl van Lith	Organizational Development & Training, City of Madison

Edgewood Schools - Planning for Growth

Sister Kathleen Malone	President, Edgewood Campus School
Mike Elliott	President, Edgewood High School
Scott Flanagan	Executive Vice President, Edgewood College

Neighbor Involvement

Daryl Sherman	Dudgeon Monroe Association, Liaison Committee Rep
Doug Poland	Vilas Neighborhood Association, Liaison Committee Rep

Overview of Campus Master Plan & Exhibits	Maggie Balistreri-Clarke, VP for Student Development, Edgewood College & Doug Hursh Potter Lawson Architects

Exhibit Tables – Questions and Discussion Sue Ellingson & Keith van Lith

- Site#1/ Woodrow St
- East end of campus/ Residence Halls/ Park and Pleasure Drive
- Storm water/ Landscaping/ Traffic and Parking
- Building massing/ uses/ approval process
- Regina Residence Hall – Eastern Expansion Plans
- Other questions/ concerns

Report back, questions, discussion and next steps

Edgewood Neighborhood Liaison Committee

Dudgeon Monroe Neighborhood Association	Shawn Schey, Daryl Sherman
Vilas Neighborhood Association	Doug Poland, Jon Standridge, Tom Turnquist
Edgewood Campus School	S. Kathleen Malone, O.P.
Edgewood High School	Mike Elliott
Edgewood College	Maggie Balistreri-Clarke

Additional Resources

Edgewood College: Mike Metcalf Dir. of Security; Erin Bykowski Assist. Dir. Parking and Transportation, Michael Guns, Chief Financial Officer, Susan Serrault, Dir. Facilities Operations John Lichtenheld, SAA traffic and storm water consultants

For detailed information, please see our web site:
www.edgewood.edu/masterplan

From: Maggie Balistreri-Clarke <balistr@edgewood.edu>
Sent: Friday, December 20, 2013 11:43 AM
To: Ellingson, Susan
Cc: Michael Guns; Doug Hursh; Mike Gordon; Daniel Carey
Subject: Residence hall process

Hi Sue,
I hope you are doing well. Thank you again for all you did to ensure that our open meeting was positive and productive.

I am writing to confirm our intent to submit a conditional use application for the new residence hall to be located at the east end of the current Regina Hall (Site # 7 on the master plan map). Our goal is to submit by the January 22 deadline to allow us to break ground in May 2014.

We were very pleased that we were able to present information on the new residence hall at the open meeting. I am also planning to call a special liaison committee meeting to review the details of the project for liaison members who were serving at the resource tables and therefore not able to hear as much about the new hall as we would like. My hope is to set this meeting for the week of January 6 or the following week.

Because the liaison committee members are available mostly in the evening – would you like to have a separate meeting during the day so that you can learn about the project? Please let me know your preferences on how to proceed. I would also welcome any other advice you have as we move forward.

Thanks so much Sue. Happiest of holidays to you!

Maggie

Maggie Balistreri-Clarke
Vice President for Student Development/Dean of Students
Edgewood College
Madison, WI 53711
(608) 663 - 2313

3

SECTION THREE

Land Use Application

LAND USE APPLICATION

CITY OF MADISON

215 Martin Luther King Jr. Blvd; Room LL-100
PO Box 2985; Madison, Wisconsin 53701-2985
Phone: 608.266.4635 | Facsimile: 608.267.8739

- All Land Use Applications should be filed with the Zoning Administrator at the above address.
- The following information is required for all applications for Plan Commission review except subdivisions or land divisions, which should be filed using the Subdivision Application.
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FOR OFFICE USE ONLY:
Amt. Paid _____ Receipt No. _____
Date Received _____
Received By _____
Parcel No. _____
Aldermanic District _____
Zoning District _____
Special Requirements _____
Review Required By:
☐ Urban Design Commission ☐ Plan Commission
☐ Common Council ☐ Other: _____

Form Effective: February 21, 2013

1. Project Address: 945 Edgewood College Drive (existing building)
Project Title (if any): Regina Hall Addition and Alterations

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- ☑ **Conditional Use, or Major Alteration to an Approved Conditional Use**
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Telephone: (608) 274-2741 Fax: (___) None Email: mikeg@potterlawson.com

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Development Schedule: Commencement May, 2014 Completion July, 2015

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☑ **Electronic Submittal:** All applicants are required to submit copies of all items submitted in hard copy with their application as Adobe Acrobat PDF files on a non-returnable CD to be included with their application materials, or by e-mail to *pcapplications@cityofmadison.com*.

☐ **Additional Information** may be required, depending on application. Refer to the Supplemental Submittal Requirements.

6. Applicant Declarations

☑ **Pre-application Notification:** The Zoning Code requires that the applicant notify the district alder and any nearby neighborhood and business associations **in writing** no later than **30 days prior to FILING this request**. List the alderperson, neighborhood association(s), and business association(s) AND the dates you sent the notices:
Susan Ellingson (12/20/13). Dudgeon Monroe & Vilas Neighborhood Associations (12/9/13).

→ If a waiver has been granted to this requirement, please attach any correspondence to this effect to this form.

☑ **Pre-application Meeting with Staff:** Prior to preparation of this application, the applicant is required to discuss the proposed development and review process with Zoning and Planning Division staff; note staff persons and date.

Planning Staff: D.A.T meeting *Date:* 12/12/13 *Zoning Staff:* D.A.T meeting *Date:* 12/12/13

The applicant attests that this form is accurately completed and all required materials are submitted:

Name of Applicant Michael Guns Relationship to Property: Vice President of Business and Finance

Authorizing Signature of Property Owner _____ Date 01-21-14

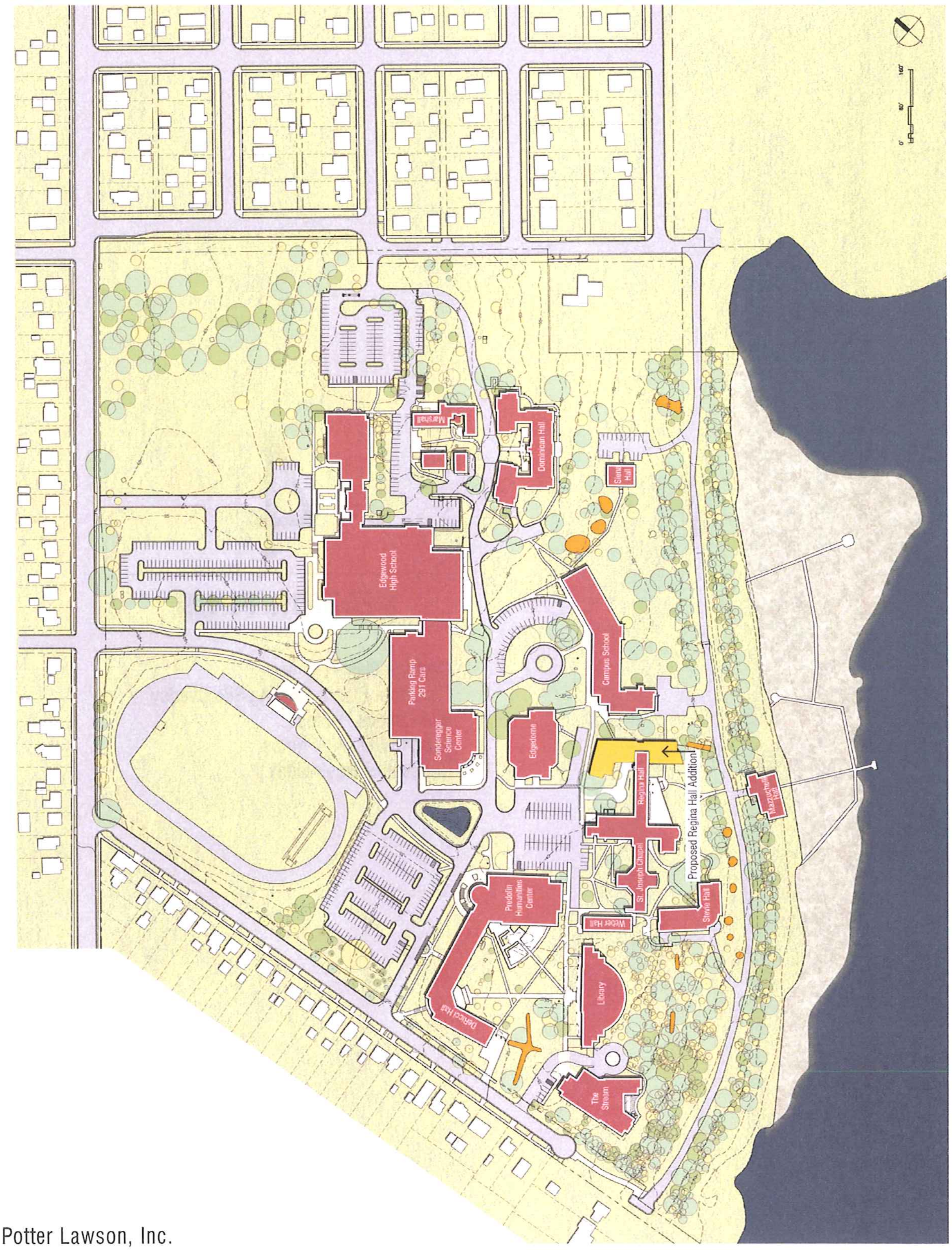
4

SECTION FOUR

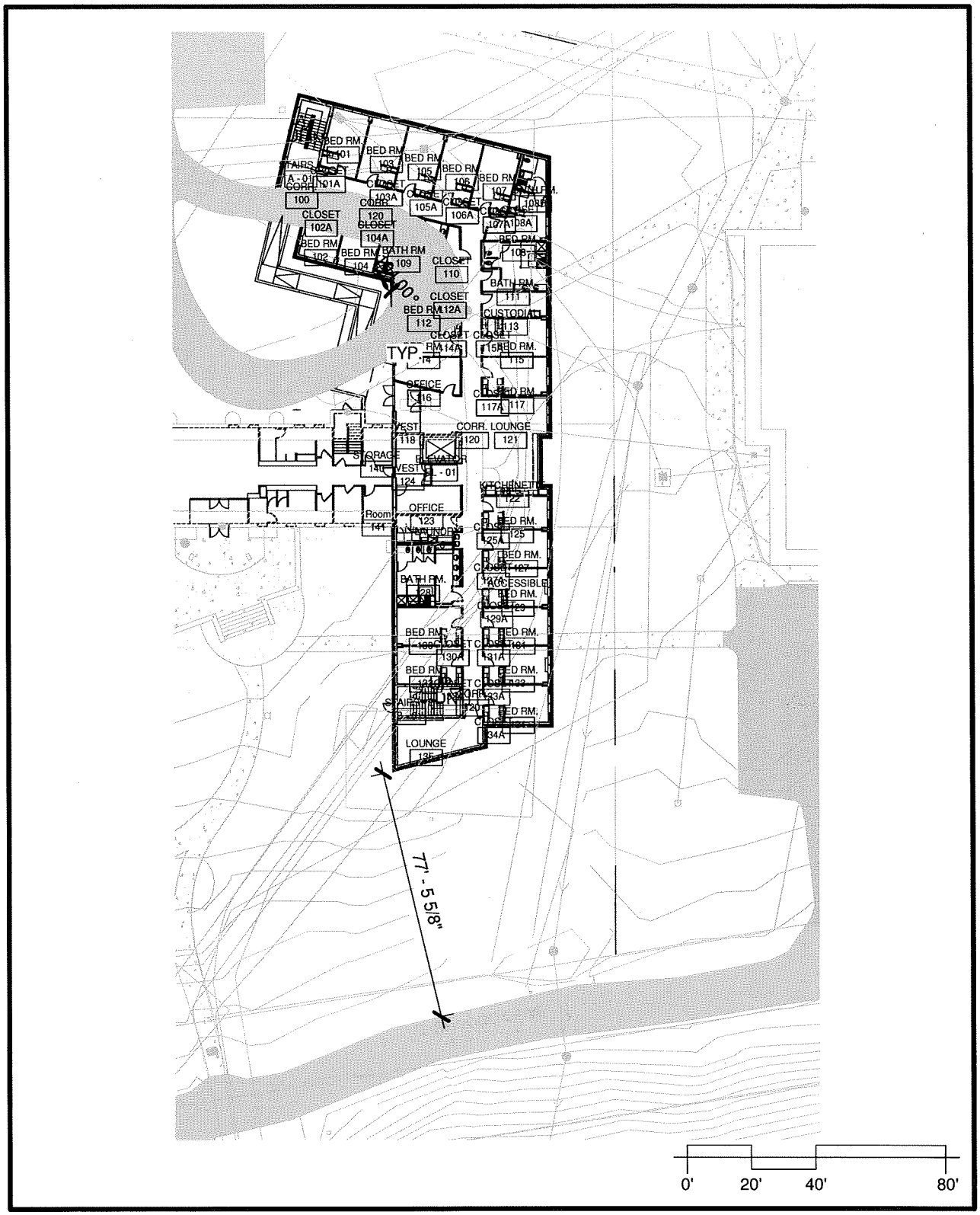
Campus Plan - Existing
First Floor Plan & Existing Site Overlay
Site Context Photos
Existing Building Photos
Conceptual Illustrations

New Resident Halls
Existing Buildings
Native American Mound

Potter Lawson
Success by Design



Campus Plan
Edgewood Campus Plan
September 03, 2013



FIRST FLOOR PLAN & EXISTING SITE OVERLAY

Regina Hall - Addition and Alterations
01/22/14

Potter Lawson
Success by Design

SITE CONTEXT PHOTOS

EXISTING BUILDING PHOTOS

EXISTING BUILDING PHOTOS

CONCEPTUAL ILLUSTRATIONS

Potter Lawson, Inc.

CONCEPTUAL ILLUSTRATIONS

Potter Lawson, Inc.

5

SECTION FIVE

Site Lighting Fixture Cut Sheets
Geotechnical Report

CR6™

Six-Inch LED Downlight

D

(LED ENGINE)

Product Description

The CR6™ LED downlight delivers up to 800 lumens of exceptional 90+ CRI light while achieving up to 67 lumens per watt. This breakthrough performance is achieved by combining the high efficacy and high-quality light of Cree TrueWhite® Technology. The CR6 is available in a warm color temperature and has a variety of trim options. It easily installs into most standard six-inch recessed IC or non-IC housings, making the CR6 perfect for use in both residential and light commercial, new construction or retrofit, applications.

Performance Summary

Utilizes Cree TrueWhite® Technology

Delivered Light Output: 625, 800 lumens

Input Power: 9.5, 12 watts

CRI: 90

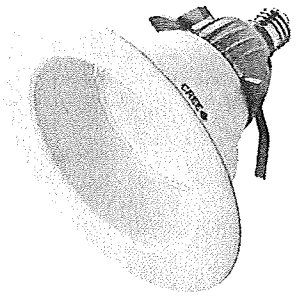
CCT: 2700K, 3000K, 3500K, 4000K

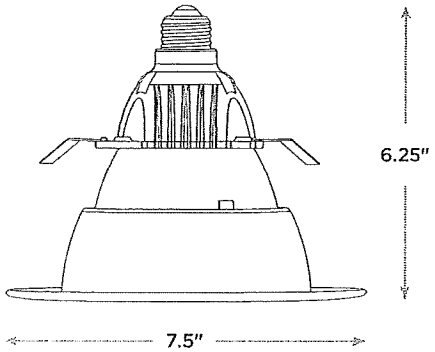
Warranty: 5 years†

Lifetime: Designed to last 50,000 hours

Dimming: Dimmable to 5%*

CR6™





Housings & Accessories

Reference Housing & Accessory documents for more details.

Trim & Reflector
CT6A Diffuse silver reflector
CT6AW Diffuse wheat reflector
CT6AB Diffuse black reflector
CT6BB Flat black flange and reflector

Housings & Trim Only	
H6 Architectural	**SC6** Cylindrical Surface Mount
RC6 New Construction	**SC6-CM** Cylindrical Cord Mount
RR6 Retrofit	**SC6-WM** Cylindrical Wall Mount

Ordering Information

Example: CR6-800L-27K-12-E26

CR6							
Series	Size		Source Lumen Output		CCT	Voltage		Base Type	
CR	6	6 inch	625L	625 Lumens	27K 2700K	12	120 Volts	E26	Edison Base
					30K 3000K			GU24	GU24 Base (Title 24 Compliant)
					35K 3500K				
					40K 4000K				
CR	6	6 inch	800L	800 Lumens	27K 2700K	12	120 Volts	E26	Edison Base
					30K 3000K			GU24	GU24 Base (Title 24 Compliant)
					35K 3500K				
					40K 4000K				

* Reference www.cree.com/lighting for recommended dimmers.
† See www.cree.com/lighting for warranty terms.

CREE TRUE WHITE TECHNOLOGY

ENERGY STAR

c UL us

Rev. Date 05/15/2013

CREE®

US: www.cree.com/lighting T (800) 236-6800 F (262) 504-5415

Canada: www.cree.com/canada T (800) 473-1234 F (800) 890-7507

HALO®

(Housing)

DESCRIPTION

Recessed 6" aperture downlight for GU24 integrated (self-ballasted) lamp. Dedicated high efficacy GU24 socket prevents substitution of lower efficacy screwbase sources. Housing is suitable for 2x8 residential or commercial installations, airtight and can be used in direct contact with insulation*. Use with a variety of trims and finishes to create different lighting effects or to match any décor. Designed for tool-less upgrade to Halo RL56 or ML56 LED lighting system.

Catalog #		Type
Project		
Comments		Date
Prepared by		

DESIGN FEATURES

Housings
- Die formed aluminum housing
- Designed for airtight ASTM-E283 compliance
- Shipped with overspray protector installed
- The can may be removed from the plaster frame to provide access to the junction box.

Plaster Frame
- Galvanized steel frame. Housing adjusts in plaster frame to accommodate up to 1-3/8" ceiling thickness.
- Integral bar hanger receivers include positive horizontal locking with recessed setscrew or crimp points.
- Regressed locking screw for securing hanger bars.
- Cutouts included for easily crimping hanger bars in position.

Slide-N-Side™ Junction Box
- Positioned to ccommodate straight conduit runs.
- Seven 1/2" trade size conduit knockouts with true pry-out slots.
- Three Slide-N-Side wire traps allow non metallic sheathed cable to be used without removing knockouts.
- Allows wiring connections to be made outside the box.
- Simply insert the cable directly into the trap after connections are made.
- Accommodates the following standard non-metallic sheathed cable type:
  - U.S. #14/2, #14/3, #12/2, #12/3
  - Canada: #14/2, #14/3, #12/2
- Push wire connectors included for field connections.

GOT NAIL! Pass -N-Thru™ Bar Hangers
- Captive preinstalled bar hangers adjust from 8-1/2" to 24" wide
- Housing can be positioned at any point within 24" span
- Pre-installed nail easily installs in regular lumber, engineered lumber and laminated beams.
- Safety and Guidance system prevents snagging, ensures smooth, straight nail penetration and allows bar hangers to be easily removed if necessary
- Automatic leveling flange aligns the housing and allows holding the housing in place with one hand while driving nails.
- Score lines allow tool-free shortening and bar hangers do not need to be removed for shortening.
- Bar hangers may be repositioned 90° on plaster frame
- Integral T-bar clip snaps onto T-bars; no additional clips are required.

Lamp Socket
GU24 plastic socket with nickel plated contacts attaches directly to the trim for consistent lamp positioning.

LED Adapter Whip
Socket whip is attached to a Halo connector for LED upgrade to with Halo RL56 and ML56 Series LED modules.

Lamps
H724ICATL: includes (1) 15W 2700K R30 GU24 CFL lamp (CF15/27/R30/GU24)

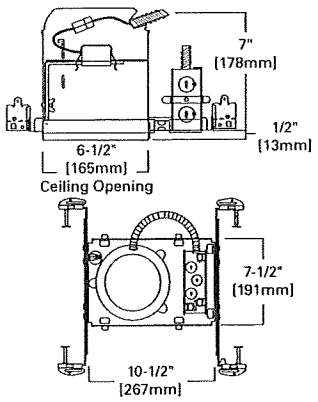
Replacement lamp: Z15R30GU24
See ordering information for compatible trims and listings with GU24 lamps.

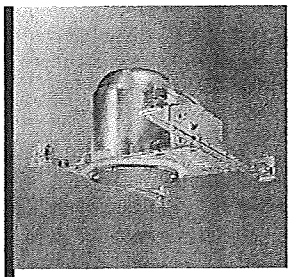
H724ICAT: See ordering information for compatible trims and listings with GU-24 lamps

Warranty
Cooper Lighting provides a (3) three year limited warranty on Halo GU24 housings that include lamp ("L" suffix). This warranty is in accordance with ENERGY STAR® qualifications.
Other lamps used in GU24 housings are subject to the lamp manufacturer's conditions of use and warranty.

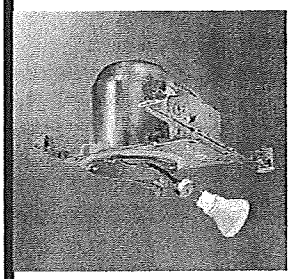
Code Compliance
- UL listed cULus 1598 Type IC, suitable for direct contact to insulation*
- cULus listed for damp locations. Wet location listed with select lens trims (shower rated).
- Airtight certified per ASTM E283.
- Can be used for International Energy Conservation Code (IECC) high efficiency luminaire compliance.
- H724ICATL - Washington State Energy Code high efficacy luminaire compliant
- H724ICATL - ENERGY STAR® Qualified Product List (consult ENERGY STAR® website)

* Not to be used in direct contact with spray foam insulation





H724ICAT



H724ICATL

GU24 CFL (LED)
6" Insulated Ceiling
AIR-TITE™ Recessed Housing

CFL: 15W Maximum

Compatible with
RL56 LED Module
ML56 LED Modules & Trims
20W Maximum

High Efficacy Housing

FOR USE IN INSULATED CEILINGS

FOR DIRECT CONTACT WITH INSULATION*

air-tite™

LitePro

D

Photometric Data Summary

TEST #E428423
DATE: 07-12-1986
TOTAL LUMINAIRE EFFICIENCY = 52.7%

LUMINAIRE: M7800-740-44800C
RECESSED HID - 8" DIA.
CLEAR SPECULAR REFLECTOR
HIGH SS
BALLAST:
BALLAST FACTOR: 1.00
LAMP:
LUMENS PER LAMP: 8000
WATTS: 129
SPACING CRITERION: 0° = N/A 90° = N/A
LUMINOUS OPENING IN FEET
LENGTH: 0.00
WIDTH: -0.62
HEIGHT: 0.00

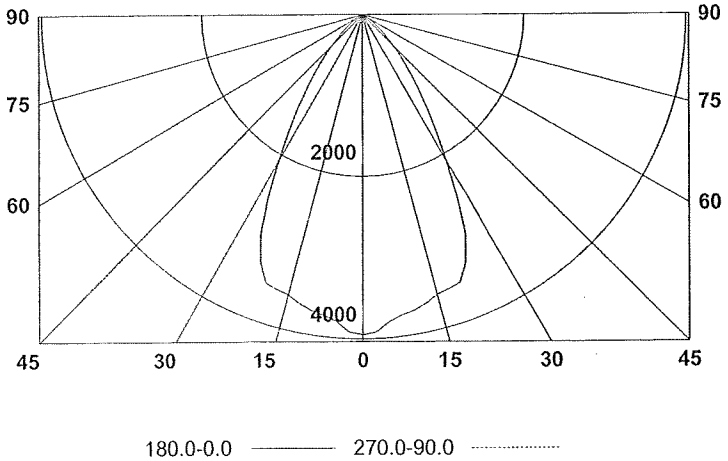
ZONAL LUMENS

ZONE	LUMENS	% LAMP	% FIXTURE
0-30	2709	33.9	64.2
0-40	3595	44.9	85.2
0-60	4168	52.1	98.8
0-90	4219	52.7	100.0
0-180	4219	52.7	100.0

CANDELA SUMMARY

ANGLE	0.0	45.0	90.0	135.0	180.0
0.0	3946	3946	3946	3946	3946
7.5	3734	3734	3734	3734	3734
15.0	3575	3575	3575	3575	3575
22.5	3311	3311	3311	3311	3311
30.0	2078	2078	2078	2078	2078
37.5	1125	1125	1125	1125	1125
45.0	534	534	534	534	534
52.5	219	219	219	219	219
60.0	62	62	62	62	62
67.5	46	46	46	46	46
75.0	0	0	0	0	0
90.0	0	0	0	0	0

INDOOR CANDELA PLOT



THIS REPORT IS BASED ON IES TEST DATA FOR A SPECIFIC LAMP/BALLAST COMBINATION. EXTRAPOLATION OF THESE DATA FOR OTHER LAMP/BALLAST COMBINATIONS MAY PRODUCE ERRONEOUS RESULTS. THE BALLAST FACTOR MUST BE APPLIED TO THE LUMEN OUTPUT RATING ASSIGNED TO THE LAMP(S) OR TO THE CANDELA VALUES SHOWN.

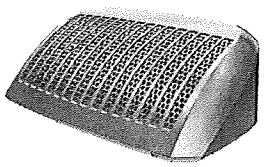
F1

Job:
Type:
Notes:

120 LINE LED

121 LED Performance Sconce - Generation 2

The Philips Gardco 121 LED Performance Sconce provides an energy efficient, architecturally pleasing solution for wall mount applications. The sloped surface ribs of the die cast aluminum housing create a distinctly unique aesthetic element, and perform important functions in the Philips Gardco thermal management system. 121 Generation 2 luminaires feature high performance Class 1 LED systems. The high performance LED optical systems produce full cutoff performance, minimizing glare and light trespass. Philips Gardco's LED technology provides maximized light output and maximum energy savings.



PREFIX	OPTICAL SYSTEM	LED WATTAGE	LED SELECTION	VOLTAGE	FINISH	OPTIONS

Enter the order code into the appropriate box above. Note: Philips Gardco reserves the right to refuse a configuration. Not all combinations and configurations are valid. Refer to notes below for exclusions and limitations. For questions or concerns, please consult the factory.

PREFIX

121	121 LED Performance Sconce - Constant Wattage / Full Light Output
121-MR	121 LED Performance Sconce - Motion Response
121-DIM	121 LED Performance Sconce - 0 - 10V Dimming
121-APD	121 LED Performance Sconce - Automatic Profile Dimming
121-DCC	121 LED Performance Sconce - Dual Circuit Control

OPTICAL SYSTEM

2	Type 2
3	Type 3
4	Type 4
MT	Medium Throw

All optical systems are supplied with a clear glass lens standard. A Diffuse Lens (DL) option is available, See **OPTIONS** *on Page 2.*

LED WATTAGE AND LUMEN VALUES

Single LED Array Wattages, Available in 121, 121-MR, 121-DIM and 121-APD Only

Ordering Code	Average System Watts[1]	LED Current (mA)	LED Quantity - Single LED Array	LED Selection	Luminaire Initial Absolute Lumens[2]			
					TYPE 2	TYPE 3	TYPE 4	MT
18LA	18	350	16	NW	*1,298 (s)*	*1,324 (s)*	*1,248 (s)*	*1,568 (s)*
26LA	26	530	16	NW	*1,817 (s)*	*1,849 (s)*	*1,745 (s)*	*2,178 (s)*
35LA-700	36	700	16	NW	*2,373 (s)*	*2,401 (s)*	*2,273 (s)*	*2,792 (s)*
35LA-350	35	350	32	NW	2,596	2,647	2,496	3,135
50LA	52	530	32	NW	3,634	3,698	3,490	4,356
75LA	72	700	32	NW	4,745	4,801	4,546	5,584

Dual LED Array Wattages, Available in 121-DCC Only

Ordering Code	Average System Watts[1]	LED Current (mA)	LED Quantity - Dual LED Arrays		LED Selection	Luminaire Initial Absolute Lumens[2]			
			Per LED Array	Total LEDs		TYPE 2	TYPE 3	TYPE 4	MT
35LA-2	35	350	16	32	NW	2,596	2,647	2,496	3,135
50LA-2	52	530	16	32	NW	3,634	3,698	3,490	4,356
75LA-2	72	700	16	32	NW	4,745	4,801	4,546	5,584

1. *Wattage may vary by +/- 8% due to LED manufacturer forward volt specification and ambient temperature. Wattage shown is average for 120V through 277V input. Actual wattage may vary by an additional +/- 10% due to actual input voltage.*
2. *Values shown are for luminaires without the DL option. Tests are in process for configurations not shown. "(s)" following the value indicates that values are scaled from tests on similar, but not identical luminaire configurations. Contact Gardco.applications@ philips.com if any approximate estimates are required for design purposes. Lumen values based on tests performed in compliance with IESNA LM-79.*

1611 Clovis Barker Road, San Marcos,TX 78666
(800) 227-0758 (512) 753-1000 FAX: (512) 753-7855 sitelighting.com

G200-037/1012

PHILIPS
GARDCO

121 LED Performance Sconce - Generation 2

LED SELECTION

CW	Cool White - 5700°K - 75 CRI Nominal
NW	Neutral White - 4000°K - 70 CRI Nominal
WW	Warm White - 3000°K - 80 CRI Nominal

VOLTAGE

UNIV	Accepts 120V through 277V input, 50hz to 60hz.
347	347V - Requires Extended Back Box, which is provided standard. Requires and includes auxilliary transformer mounted in Extended Back Box.

FINISH

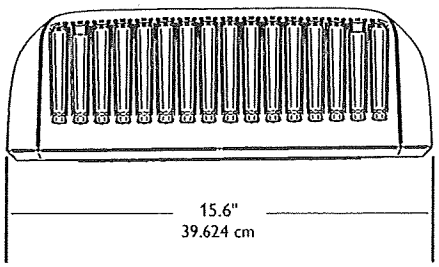
BRP	Bronze Paint
BLP	Black Paint
WP	White Paint
NP	Natural Aluminum Paint
BGP	Beige Paint
OC	Optional Color Paint *Specify Optional Color or RAL ex: OC-LGP or OC-RAL7024.*
SC	Special Paint *Specify. Must supply color chip.*

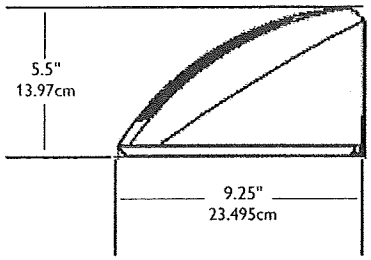
OPTIONS

F	Fusing *(Provide specific inpout voltage)*
DL	Solite® Diffusing Glass Lens *(Reduces performance significantly.)*
PCB	Button Type Photocontrol *(Provide specific inpout voltage)*
WS	Wall Mounted Box for Surface Conduit *(Rear entry permitted.)*
EBB	Extended Back Box *(Provided standard with 347V luminaires.)*
SPR[3]	Surge Protection 120V thru 277V Input meeting ANSI C62.41. 2
SPRH[3]	Surge Protection 347V thru 480V Input meeting ANSI C62.41. 2

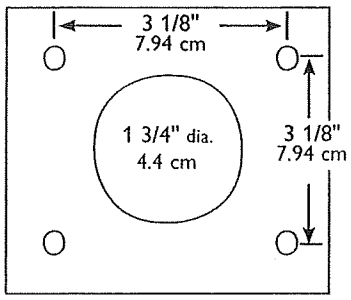
3. Not available with Fusing (F) option. DCC luminaires require one (1) surge protector per circuit.

DIMENSIONS





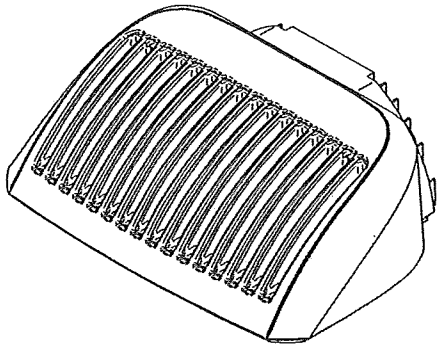
Mounting Plate

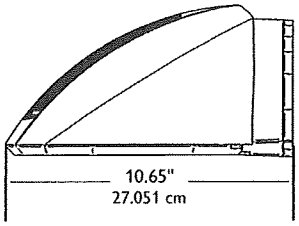


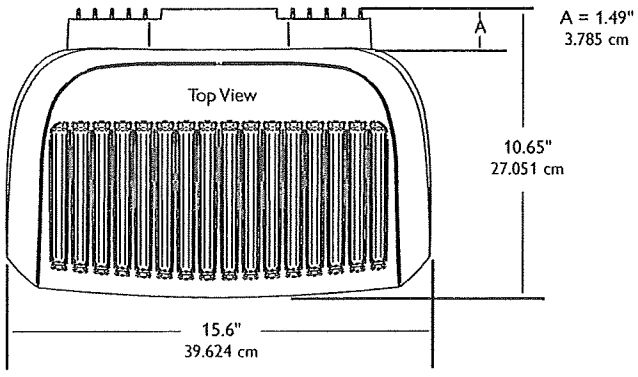
Mounting Bolt Pattern

Note: Mounting plate center is located in the center of the luminaire width and 2.38" (6.03cm) above the luminaire bottom (lens down position). Splices must be made in the J-box (by others). Mounting plate must be secured by max. 5/16" (.79cm) diameter bolts (by others) structurally to the wall.

With Extended Back Box (EBB) Option







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G200-037/1012

PHILIPS
GARDCO

LitePro

Photometric Data Summary

F1

LUMINAIRE: 121-2-26LA-CW
121 LED SCONCE - GEN 2

TEST #121-2-26
DATE: 1/20/2014
TOTAL LUMINAIRE EFFICIENCY = 100.0

BALLAST:
BALLAST FACTOR: 1.00
LAMP:
LUMENS PER LAMP: 2573
WATTS: 26
SPACING CRITERION: 0° = N/A 90° = N/A
LUMINOUS OPENING IN FEET
LENGTH: 0.00
WIDTH: 0.00
HEIGHT: 0.00

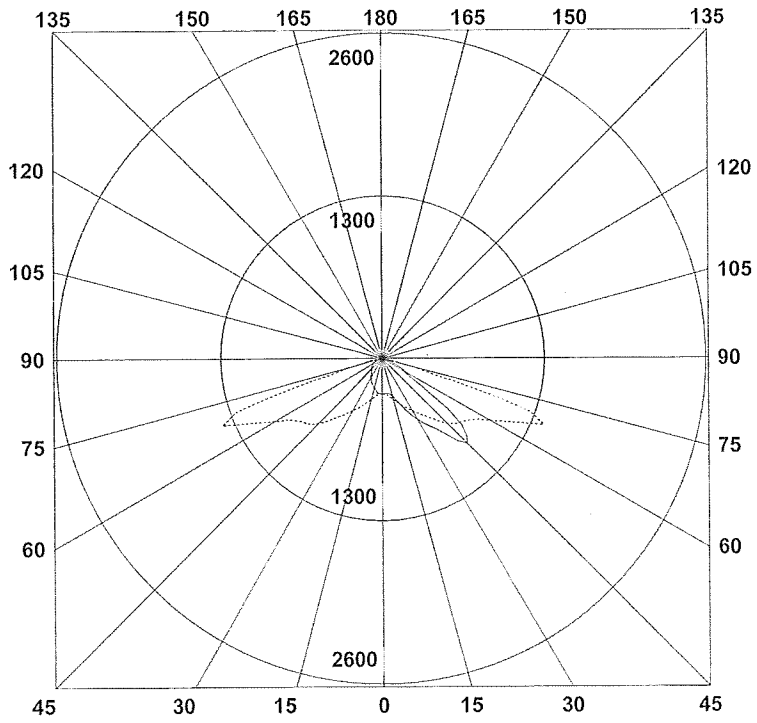
ZONAL LUMENS

ZONE	LUMENS	% LAMP	% FIXTURE
0-30	287	11.1	11.1
0-40	560	21.8	21.8
0-60	1518	59.0	59.0
0-90	2573	100.0	100.0
0-180	2573	100.0	100.0

CANDELA SUMMARY

ANGLE	0.0	60.0	77.5	105.0	180.0
0.0	284	284	284	284	284
15.0	311	322	335	335	245
30.0	564	374	470	361	176
45.0	961	530	721	289	119
60.0	210	1139	1125	174	81
75.0	21	60	259	197	29
90.0	0	0	0	0	0
105.0	0	0	0	0	0
120.0	0	0	0	0	0
135.0	0	0	0	0	0
150.0	0	0	0	0	0
165.0	0	0	0	0	0
180.0	0	0	0	0	0

INDOOR CANDELA PLOT



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P

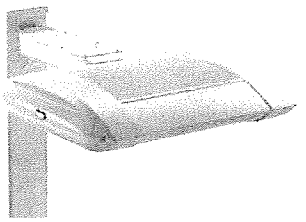
ARE-EDG-5S-DA

Cree Edge™ Area Luminaire – Type V Short – Direct Arm Mount

12' POLE

Product Description

Slim, low profile design minimizes wind load requirements. Luminaire sides are rugged cast aluminum with integral, weathertight LED driver compartments and high performance aluminum heat sinks. Convenient, interlocking mounting method. Mounting housing is rugged die cast aluminum and mounts to 3-6" (76-152mm) square or round pole. Luminaire is secured by two 5/16-18 UNC bolts spaced on 2" (51mm) centers.



Performance Summary

Utilizes BetaLED® Technology

Patented NanoOptic® Product Technology

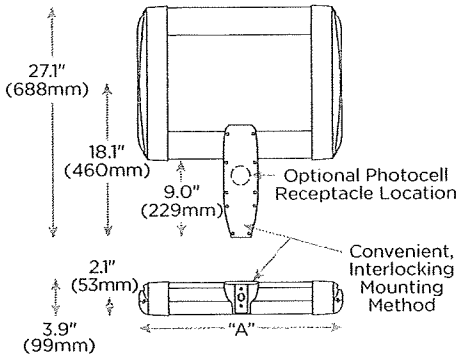
Made in the U.S.A. of U.S. and imported parts

CRI: Minimum 70 CRI

CCT: 5700K (+ / - 500K) Standard, 4000K (+ / - 300K)

Limited Warranty†: 10 years on luminaire / 10 years on Colorfast DeltaGuard® finish

EPA and Weight: Reference EPA and Weight spec sheet



LED Count (x10)	Dim. "A"
04	12.1" (306mm)
06	14.1" (357mm)
08	16.1" (408mm)
10	18.1" (459mm)
12	20.1" (510mm)
14	22.1" (560mm)
16	24.1" (611mm)
20	28.1" (713mm)
24	32.1" (814mm)

Accessories

Mounting Accessories
XA-BRDSPK Bird Spikes

Ordering Information

Example: ARE-EDG-5S-DA-04-E-UL-SV-350-OPTIONS

ARE-EDG	5S	DA	06	E	UL	BK	525	50K
Product	Size	Mounting	LED Count (x10)	Series	Voltage	Color Options	Drive Current	Options
ARE-EDG	**5S** Type V Short	**DA** Direct Arm	**04** **06** **08** **10** **12** **14** **16** **20** **24**	**E**	**UL** Universal 120-277V **UH** Universal 347-480V **34** 347V	**SV** Silver (Standard) **BK** Black **BZ** Bronze **PB** Platinum Bronze **WH** White	**350*** 350mA **525**** 525mA **700***** 700mA	**40K 4000K Color Temperature** - Color temperature per luminaire **DIM 0-10V Dimming** - Control by others - Refer to dimming spec sheet for details - Can't exceed specified drive current **F Fuse** - When code dictates fusing, use time delay fuse - Not available with all ML options. Refer to ML spec sheet for availability with ML options **HL Hi / Low (175 / 350 / 525 Dual Circuit Input)** - Refer to ML spec sheet for details - Sensor not included **P Photocell** - Not available with all ML options. Refer to ML spec sheet for availability with ML options - Must specify voltage other than UH **R NEMA Photocell Receptacle** - Not available with all ML options. Refer to ML spec sheet for availability with ML options - Photocell by others **ML Multi-Level** - Refer to ML spec sheet for details

† See www.cree.com/lighting/products/warranty for warranty terms
* Available on luminaires with 60-240 LEDs.
** Available on luminaires with 40-160 LEDs.
*** Available on luminaires with 40-60 LEDs.

P

ARE-EDG-5S-DA

Product Specifications

CONSTRUCTION & MATERIALS

- Slim, low profile, minimizing wind load requirements
- Luminaire sides are rugged die cast aluminum with integral, weathertight LED driver compartments and high performance heat sinks
- Convenient interlocking mounting method. Mounting housing is rugged die cast aluminum mounting to 3-6" (76-152mm) square or round pole, secured by two 5 / 16-18 UNC bolts spaced on 2" (51mm) centers
- Includes leaf / debris guard
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Standard is silver. Bronze, black, white, and platinum bronze are also available

ELECTRICAL SYSTEM

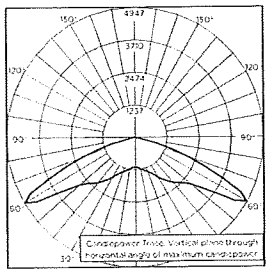
- **Input Voltage:** 120-277V or 347-480V, 50 / 60Hz, Class 1 drivers
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral weathertight electrical box with terminal strips (12Ga-20Ga) for easy power hookup
- Integral 10kV surge suppression protection standard
- To address inrush current, slow blow fuse or type C / D breaker should be used

REGULATORY & VOLUNTARY QUALIFICATIONS

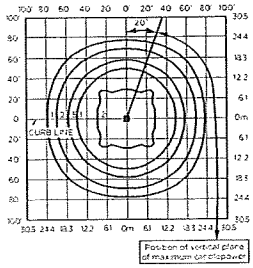
- cULus Listed
- Suitable for wet locations
- Enclosure rated IP66 per IEC 60529 when ordered without P or R options
- Consult factory for CE Certified products
- Certified to ANSI C136.31-2001, 3G bridge and overpass vibration standards
- 10kV surge suppression protection tested in accordance with IEEE / ANSI C62.41.2
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- Product qualified on the DesignLights Consortium™ ("DLC") Qualified Products List ("QPL") when ordered without full backlight control shield
- Meets Buy American requirements within ARRA

Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP certified laboratory.



CSA Test Report #: 6362
ARE-EDG-5S-**-06-E-UL-700-40K
Initial Delivered Lumens: 12,798



ARE-EDG-5S-**-12-E-UL-525-40K
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 20,700
Initial FC at grade

IES Files
To obtain an IES file specific to your project consult:
http://www.cree.com/lighting/tools-and-support/exterior-ies-configuration-tool

Lumen Output, Electrical, and Lumen Maintenance Data

Type V Short Distribution

LED Count (x10)	5700K Initial Delivered Lumens*	5700K BUG Ratings** Per TM-15-11	4000K Initial Delivered Lumens*	4000K BUG Ratings** Per TM-15-11	System Watts 120-480V	TOTAL CURRENT 120V	208V	240V	277V	347V	480V	50K Hours Projected Lumen Maintenance Factor @ 15°C (59°F)***
350mA @ 25°C (77°F)												
06	7,696	B3 U0 G1	7,411	B3 U0 G1	66	0.52	0.31	0.28	0.26	0.20	0.15	93%
08	10,261	B3 U0 G2	9,881	B3 U0 G2	90	0.75	0.44	0.38	0.34	0.26	0.20	
10	12,796	B3 U0 G2	12,322	B3 U0 G2	110	0.92	0.53	0.47	0.41	0.32	0.24	
12	15,355	B4 U0 G2	14,786	B4 U0 G2	130	1.10	0.63	0.55	0.48	0.38	0.28	
14	17,800	B4 U0 G2	17,141	B4 U0 G2	158	1.32	0.77	0.68	0.62	0.47	0.35	
16	20,343	B4 U0 G2	19,590	B4 U0 G2	179	1.49	0.87	0.77	0.69	0.53	0.39	
20	25,429	B4 U0 G2	24,487	B4 U0 G2	220	1.84	1.06	0.93	0.83	0.64	0.47	
24	30,515	B5 U0 G3	29,385	B5 U0 G3	261	2.19	1.26	1.10	0.97	0.76	0.56	
525mA @ 25°C (77°F)												
04	7,265	B3 U0 G1	6,997	B3 U0 G1	70	0.58	0.34	0.31	0.28	0.21	0.16	92%
06	10,774	B3 U0 G2	10,375	B3 U0 G2	101	0.84	0.49	0.43	0.38	0.30	0.22	
08	14,365	B4 U0 G2	13,833	B4 U0 G2	133	1.13	0.66	0.58	0.51	0.39	0.28	
10	17,914	B4 U0 G2	17,250	B4 U0 G2	171	1.43	0.83	0.74	0.66	0.50	0.38	
12	21,496	B4 U0 G2	20,700	B4 U0 G2	202	1.69	0.98	0.86	0.77	0.59	0.44	
14	24,920	B4 U0 G2	23,997	B4 U0 G2	232	1.94	1.12	0.98	0.87	0.68	0.50	
16	28,489	B5 U0 G3	27,426	B5 U0 G3	263	2.21	1.27	1.11	0.97	0.77	0.56	
700mA @ 25°C (77°F)												
04	8,874	B3 U0 G1	8,546	B3 U0 G1	92	0.78	0.46	0.40	0.36	0.27	0.20	90%
06	13,160	B3 U0 G2	12,672	B3 U0 G2	134	1.14	0.65	0.57	0.50	0.39	0.29	

* Actual product lumen yield may vary between -4 and +10% of initial delivered lumens.
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: www.ies.org/PDF/Errata/TM-15-11BugRatingsAddendum.pdf.
*** For recommended lumen maintenance factor data see TD-13. Calculated L_{70} based on 6,000 hours LM-80-08 testing + 150,000 hours.

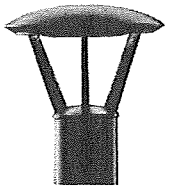
www.cree.com/lighting T (800) 236-6800 F (262) 504-5415

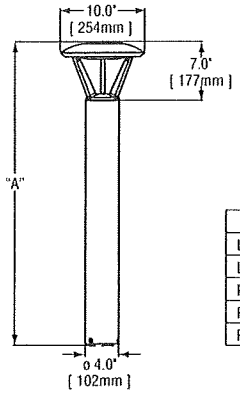
P1

PWY-EDG-5M THE EDGE® LED Pathway Light

Rev. Date: 3/7/12

BetaLED Catalog #: PWY - EDG - 5M - - 02 - D - - - - -





Model	Dim. "A"
Landscape-13	13" [330mm]
Landscape-18	18" [457mm]
Pathway	36" [914mm]
Pathway	42" [1067mm]
Pedestrian	96" [2438mm]

Notes:

Product	Family	Optic	Mounting	# of LEDs (x 9)	LED Series	Voltage	Color Options	Drive Current Not Field Adjustable	Factory-Installed Options Please type additional options in manually on the lines provided above.
PWY Pathway Light	EDG	5M[1] Type V Medium	☐ P0[2] ☐ P1[3] ☐ P3[4] ☒ P4[5] ☐ P8[6]	02	~~D~~ E	☒ UL Universal 120–277V ☐ UH[7] Universal 347–480V ☐ 12 120V ☐ 24 240V ☐ 27 277V ☐ 34[7] 347V ☐ 48[7] 480V	☐ SV Silver (Standard) ☒ BK Black ☐ WH White ☐ BZ Bronze ☐ PB Platinum Bronze	☐ 350 350mA ☒ 525[8] 525mA	☐ 40K 4000K Color Temperature[9] ☐ F Fuse[10,11,12] ☐ HL Hi/Low (175/350/525, dual circuit input)[13,14] ☐ TL Two-Level (175/525 w/ integrated sensor control)[13] ☐ TL2 Two-Level (0/350 w/ integrated sensor control)[13] ☐ TL3 Two-Level (0/525 w/ integrated sensor control)[13] ☐ WB Welded Base[15] 50K

Footnotes

1. IESNA Type V Medium distribution
2. 13" (330mm) landscape fixture
3. 18" (18mm) landscape fixture
4. 3' (0.9m) pathway fixture (bollard)
5. 42" (1.68mm) pathway fixture (bollard)
6. 8' (2.4m) pedestrian fixture
7. Available with P3, P4 and P8 mounting options
8. Available with P1, P3, P4, and P8 mounting options
9. Color temperature per fixture; 5700K standard; minimum 70 CRI
10. Not available with all multi-level options. Refer to multi-level spec sheet for availability and additional information
11. When code dictates fusing use time delay fuse
12. Not available when UH, 34 or 48 voltage is selected
13. Refer to multi-level spec sheet for availability and additional information
14. Sensor not included
15. Standard on P8 mounting option; available with P1, P3 and P4 mounting options

LED PERFORMANCE SPECS

# of LEDs	Initial Delivered Lumens – Type V Medium @ 5700K	BUG Rating B	U	G	Initial Delivered Lumens – Type V Medium @ 4000K	BUG Rating B	U	G	System Watts 120–277V	Total Current @ 120V	Total Current @ 208V	Total Current @ 240V	Total Current @ 277V	System Watts 347–480V*	Total Current @ 347V	Total Current @ 480V	L_{70} Hours** @ 25° C (77° F)	50K Hours Lumen Maintenance Factor** @ 15° C (59° F)
350mA Fixture Operating at 25° C (77° F)																		
18	1,498	1	1	1	1,380	1	1	1	22	0.18	0.12	0.10	0.10	28	0.09	0.13	>150,000	91%
525mA Fixture Operating at 25° C (77° F)																		
18	2,097	2	1	2	1,932	1	1	1	34	0.29	0.19	0.17	0.15	40	0.12	0.13	137,000	89%

*Utilizes magnetic step-down transformer when 525mA drive current or multi-level options are selected

**For recommended lumen maintenance factor data see TD-13

***For more information on the IES BUG (Backlight-Uplight-Glare) Ratings visit www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf

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Made in the U.S.A. of U.S. and imported parts.
Meets Buy American requirements within the ARRA.

P1

PWY-EDG-5M THE EDGE® LED Pathway Light

Rev. Date: 3/7/12

General Description

Durable die-cast aluminum fixture housing mounts directly to 4" (102mm) diameter pole without visible mounting hardware for clean appearance. Pole mounts to rugged die cast aluminum internal flange secured by (3) 3/8-16 anchor bolts (provided) Note: T45 Torx 3/8 socket required for head installation. Top mounted LEDs for superior optical performance and light control. Five year limited warranty on fixture.

Electrical

Fixture lit by 18W high power, white, 5700K (+/- 500K per full fixture), minimum 70 CRI long life LED sources. 4000K (+/-3300K per full fixture) also available. 120–277V 50/60 Hz, Class 1 drivers are standard. 347–480V 50/60 Hz driver is optional. LED drivers have power factor >90% and THD <20% at full load. Units provided with integral 10kV surge suppression protection standard. Surge protection standard. Surge protection tested in accordance with IEEE/ANSI C62.41.2.

Testing & Compliance

UL listed in the U.S. and Canada for wet locations. Consult factory for CE Certified products. Fixture also available with CE listing. RoHS compliant. ENERGY STAR Qualified LED Lighting. Dark Sky Friendly. IDA Approved.

Finish

Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultra-durable silver powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Bronze, black, white and platinum bronze powder topcoats are also available. The finish is covered by our 10 year limited warranty.

Fixture and finish are endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117.

Patents

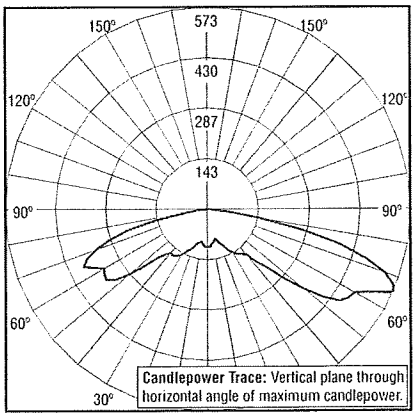
U.S. and international patents granted and pending. BetaLED is a division of Ruud Lighting, Inc. For a listing of Ruud Lighting, Inc. patents, visit www.uspto.gov.

Field-Installed Accessories

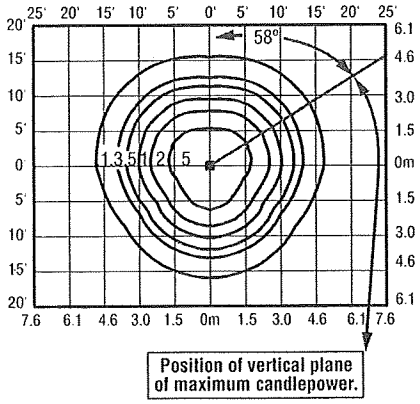
Retro-Fit Kit
Used for replacement of existing bollards.

- ☐ XA-XBP8RSV
- ☐ XA-XBP8RBK
- ☐ XA-XBP8RWH
- ☐ XA-XBP8RBZ
- ☐ XA-XBP8RPB

Photometrics



Independent Testing Laboratories certified test. Report No. ITL70714. Candlepower trace of 5700K, 18 LED Type V Medium pathway luminaire with 1,520 initial delivered lumens operating at 350mA. All published luminaire photometric testing performed to IESNA LM-79-08 standards.



Isofootcandle plot of 5700K, 18 LED Type V Medium pathway luminaire at 3' (.9 m) A.F.G. Luminaire with 1,498 initial delivered lumens operating at 350mA. Initial FC at grade.

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Meets Buy American requirements within the ARRA.

CGC, Inc.

Construction • Geotechnical
Consulting Engineering/Testing

September 22, 2003
C03232

Mr. Al Rouse, Business Office
Edgewood College
855 Woodrow Street
Madison, WI 53711

Re: Geotechnical Exploration
Regina Hall Expansion
Edgewood College Campus
Madison, Wisconsin

Dear Mr. Rouse:

Construction • Geotechnical Consultants, Inc. (CGC) has completed the subsurface exploration for the proposed expansion. The primary purpose of this exploration program was to evaluate the subsurface conditions on the site and to provide geotechnical recommendations regarding foundation, floor slab, below-grade walls and pavement design/construction. Two copies of this report are provided for your use, with an additional copy being sent to Jim Moravec of Potter Lawson Architects.

PROJECT DESCRIPTION

We understand the expansion to Regina Hall will be a four-story, steel-frame building with reinforced concrete foundations and pre-cast flooring. The lowest level will be built partially below grade with the floor grade established near EL 28. Structural loads are presumed to be moderate (column loads of about 350 kips and wall loads of 13.5 kip/lin ft). The project will also include reconfiguration of asphalt-paved parking and drive areas around the addition that will be built on the east end of the existing building. Note the addition area is relatively flat and mantled with pavement or grass.

SUBSURFACE EXPLORATION

The subsurface conditions in the area of proposed construction were explored by drilling four Standard Penetration Test (SPT) borings to depths of 10 to 13.7 ft at locations determined by Potter Lawson. The boring locations are shown in plan on the soil boring location map presented in Appendix B. Ground surface elevations at the boring locations were interpolated from the topographic map provided to us and should be considered approximate. Note that drilling depths were originally planned to be 30 ft but auger refusal occurred on competent dolomite frequently encountered across the campus.

3011 Perry Street, Madison, WI 53713
Telephone: 608/288-4100
FAX: 608/288-7887

The soil borings were performed by Badger State Drilling (under subcontract to CGC) on September 16, 2003 using a truck-mounted CME-55 drill rig equipped with hollow stem augers and an automatic hammer. Soil samples were obtained at the boring locations in accordance with SPT techniques (ASTM D1586). The specific procedures used for drilling and sampling are described in Appendix A.

SITE CONDITIONS

The subsurface profile revealed by the borings is fairly consistent and can be described in general terms by the following strata, in descending order:

- About 5 to 6 in. of ***topsoil*** or 12 in. ***pavement*** (asphalt and base course);
- 2.5 to 5 ft of stiff to very stiff ***lean clay*** (with pocket penetrometer readings, an estimate of the soil's unconfined compressive strength, generally ranging from 1.5 to 3.5 tsf) or loose brown clayey ***silt***;
- Medium dense ***sand strata*** with some silt and gravel; followed by
- Dolomite ***bedrock***. Auger refusal occurred as noted on the boring logs on what is considered competent dolomite.

As an exception, a loose clayey sand layer was observed in B-4 between the silt and sand.

Groundwater was not encountered in the boreholes during or shortly after drilling. Fluctuations in the water table should be expected in response to seasonal variations in precipitation, infiltration, evapotranspiration, nearby lake levels and other factors. Additional details on the soil and groundwater conditions can be found on the boring logs in Appendix B.

DISCUSSION AND RECOMMENDATIONS

It is our opinion that the site is suitable for construction and that the building addition can be supported by conventional shallow foundations. Our recommendations for site preparation, as well as foundation, floor slab, below-grade walls and pavement design/construction are presented in the following subsections. Additional information regarding the conclusions and recommendations presented in this report is discussed in Appendix C.

1. Site Preparation

To prepare the site for construction, we recommend that vegetation and topsoil be stripped to a minimum of 5 to 10 ft beyond the proposed construction areas, including sideslopes for the lower level excavation. Tree stumps should also be grubbed at that time. The topsoil should be stockpiled for later re-use in landscaped areas. The exposed subgrades are expected to consist primarily of natural stiff clay or loose to medium dense granular soils (silt or sand). Areas to receive fill (if any) should first be proof-rolled with a heavy rubber-tired piece of construction equipment such as a tri-axle truck, scraper or front-end loader. If soft or yielding areas are detected, they should be stabilized using breaker run stone compacted into the subgrade until little (if any) deflection is noted. Alternatively, the soft subgrade soils can be undercut and removed. Granular backfill should then be placed to re-establish grade. Fill should be placed and compacted to a minimum of 95% of maximum dry density, based on modified Proctor methods (ASTM D1557), in accordance with our recommended compacted fill specifications presented in Appendix D.

The on-site soils (excluding topsoil) from cut areas are acceptable for reuse as fill. However, moisture conditioning of the clayey soils will likely be required to achieve specified levels of compaction and may hinder construction progress. As such, the on-site granular soils are preferred for use as fill because they are generally easier to place and compact under a wider range of weather conditions. Clay soils are best used in the lower lifts of fill in parking areas or in landscaped areas. The fill should be placed and compacted in accordance with our recommended compacted fill specifications attached in Appendix D. Periodic field density tests taken by CGC staff within the fill are recommended to document the adequacy of the compactive effort.

2. Foundation Design

It is our opinion that the proposed structure can be supported on conventional shallow spread foundations. Because of the proposed lower level, we expect that the majority of footings will bear within natural sand strata about 8 to 10 ft below grade. As an alternative, footings could be lowered to bear on bedrock. Shallower footings for canopies could also bear within near surface clay or silt.

Footing excavations should be performed with a smooth-edged backhoe bucket. We further recommend that the base of each footing excavation in granular soils be recompacted with a hoe-pak or large plate compactor to densify soils loosened during excavation. If loose or soft areas persist, we recommend that the areas be undercut and replaced with compacted granular backfill. For stress distribution purposes, the width of undercut excavations should be widened 1 ft for each foot of undercut. Subgrade observation by CGC is recommended to check the adequacy of bearing conditions and recommend remedial measures, if necessary. Note that portions of the clayey silt or clayey sand may require undercutting/replacement for shallow footings.

Provided the foundations are installed in accordance with the preceding recommendations, the following parameters may be used for foundation design:

- Maximum allowable bearing pressure:
  - -- Shallow footings on clay or silt strata within about 5 ft of the existing ground surface — 2000 psf
  - -- Footings on natural sand strata at least 6 ft below existing grades — 4000 psf
  - -- Footings bearing on bedrock — 10,000 psf
- Minimum foundation widths:
  - -- Continuous wall footings: — 18 in.
  - -- Column footings: — 30 in.
- Minimum footing depths for frost protection: — 4 ft

Provided the foundation design/construction recommendations discussed above are followed, we estimate that total and differential settlements should not exceed 1.0 and 0.5 in., respectively.

In our opinion, the average soil/rock properties in the upper 100 ft of the site (based on SPT blow counts (N-values) that will exceed 50 blows/ft on average) can be characterized as a very dense soil/soft rock profile. This characterization would place the site in Site Class C for seismic design according to the 2000 International Building code (see Table 1615.1.1)

3. Floor Slabs

In our opinion, the floor slabs for the basement slab-on-grade can be supported on natural sand soils and may be designed using a subgrade modulus of 175 pci. Prior to slab construction, the subgrades should be recompacted to densify soils that may become disturbed or loosened during construction activities. The design subgrade modulus is based on a recompacted subgrade such that non-yielding conditions are developed. To serve as a capillary break, the final 4 to 6 in. of soil placed below the slab should consist of an imported well-graded sand or gravel with no more than 5 percent by weight passing the No. 200 U.S. standard sieve. To further minimize the potential for moisture migration, a plastic vapor barrier could also be utilized. Fill and drainage course material below the floor slab should be placed as described in the Site Preparation section of this report.

The floor slab should be isolated from the building walls and columns with a compressible filler, and the design should include an adequate number of isolation and contraction joints.

4. Below-Grade Walls

We anticipate that the below-grade walls for the proposed structure will be supported by the lower level slab and upper level framing. Therefore, *at-rest* lateral earth pressures should be used during design. To minimize the buildup of such pressures, high-quality backfill should be placed within 4 to 6 ft of the walls. The granular backfill should be an imported, well-graded sand or gravel having no more than 12 percent passing the No. 200 U.S. standard sieve. *(Note that the on-site sand is too silty to be acceptable for this purpose, but could be used if a three-dimensional foundation drainage board is provided against the basement walls.)* Although groundwater appears to be well below the lowest floor grade, we recommend that consideration be given to incorporating a perimeter drainage system that is continuously connected to the granular backfill placed behind the walls. To impede the inflow of surface moisture, the final 2 ft of backfill in unpaved areas should consist of a clayey fill cap. The clayey cap (or pavement) should be graded to promote positive drainage away from the walls. Recommended perimeter drain details are presented in Appendix E for consideration.

Before placing the wall backfill, the exterior walls should be damp-proofed with spray-applied or mopped-on rubber or bituminous sealer. Compaction of the backfill within 3 ft of the walls should be performed with lightweight equipment to avoid the development of excessive lateral earth pressures. The backfill should be compacted to a minimum of 93 percent modified Proctor following Appendix D guidelines. Lower level walls constructed in accordance with the above recommendations may be designed for an equivalent fluid pressure of 55 psf per ft of depth.

If exterior cantilevered retaining walls are required, these walls, which are free to rotate about the toe, may be designed for *active* earth pressure conditions using an equivalent fluid pressure of 35 psf per ft of depth. *Passive* pressures are expected to be on the order of 200 psf per ft. The passive value includes a safety factor of 2 to prevent excessive wall deflection. A sliding friction angle and friction factor of 20^0 and 0.35, respectively, could also be used in the design. The retaining walls should be backfilled in a similar fashion to that described above, and weepholes protected by geotextile filter fabric should be provided for drainage behind the walls. The below-grade wall design should take into account surcharge effects which could be applied either during or after construction.

5. Pavement Design

We assume the parking lot/access drive pavement will be exposed to primarily automobile traffic with minimal truck/bus traffic (i.e., a light to medium traffic class). The pavement design will likely be controlled by the clayey soils expected at subgrade elevation across much of the site. After topsoil removal and prior to fill placement, the subgrade soils should be proof-rolled as discussed

in the Site Preparation section of this report. The pavement section tabulated below was selected assuming a CBR value of approximately 5 for the clayey soils anticipated at subgrade elevation and a design life of 20 years.

TABLE 1
RECOMMENDED PAVEMENT SECTIONS

Material	Thickness (in.)	WDOT Specification[1]
Bituminous surface course	1.25	Section 407.3.3.2 (Gradation No. 3)
Bituminous binder course	1.75	Section 407.3.3.1 (Gradation No. 2)
Crushed aggregate base course	8.0	Section 304.2.6 (Gradation No. 1 or 2)
TOTAL THICKNESS	11.0	

Notes:

1. Wisconsin DOT *Standard Specification for Highway and Structure Construction*, with supplementals.

2. Compaction requirements:
   - Bituminous concrete: Refer to Section 407.5.1.5, WDOT *Standard Specification for Highway and Structure Construction*, 1996 edition.
   - Base course: 95% modified Proctor (ASTM D1557).

3. Type MV hot mix asphalt is recommended.

The pavement design assumes a stable non-yielding subgrade and a regular program of preventative maintenance. If there is a delay between subgrade preparation and placing the base course, the subgrade should be recompacted.

Pavement areas subjected to concentrated wheel loads (i.e., loading docks, dumpster pads, etc.) should be constructed of Portland cement concrete. The slab should be a minimum of 6-in. thick and should contain mesh reinforcement for crack control. A subgrade modulus of 150 pci may be used for design of rigid pavements founded on proof-rolled stiff clay or firm sand soils.

CONSTRUCTION CONSIDERATIONS

Due to variations in weather, construction methods and other factors, specific construction problems are difficult to predict. Soil-related difficulties which could be encountered on the site are discussed below:

- Due to the potentially sensitive nature of some of the on-site surficial soils to construction traffic disturbance, we recommend that general site grading activities be completed during dry weather, if possible. Earthwork construction during the early spring or late fall could be complicated as a result of wet weather and freezing temperatures. Also, to the extent practical, construction traffic should be kept off prepared subgrades to minimize their disturbance.

- During cold weather, exposed subgrades should be protected from freezing before and after footing construction. Fill should never be placed while frozen.

- Excavations extending greater than 4 ft in depth below the existing ground surface should be sloped or braced in accordance with current OSHA standards, if it is necessary for workers to enter the excavation. Granular soils on this site would likely be considered OSHA Type C soils, requiring excavation slopes of 1.5H:1V or flatter.

- Based on observations made during the field investigation, groundwater infiltration into excavations for the building is not expected. However, water accumulating at the base of the building excavation as a result of precipitation or seepage should be quickly removed using pumps operating from filtered sump pits.

- Special rock excavation techniques, such as chiseling, may be needed to remove competent, well-cemented dolomite. This possibility increases in confined trenches for utilities, etc. Suggested language for defining "top of rock" necessitating special removal techniques is included in Appendix F.

RECOMMENDED CONSTRUCTION MONITORING

The quality of the foundation and floor slab subgrades will largely be determined by the level of care exercised during site development. To check that earthwork and foundation construction proceeds in accordance with our recommendations, the following operations should be monitored by CGC:

- Site stripping/subgrade proof-rolling within the construction areas;

- Fill placement and compaction;
- Foundation excavation and subgrade preparation; and
- Concrete placement.

CLOSING REMARKS

It has been a pleasure to serve you on this project. If you have any questions or need additional consultation, please contact us.

Sincerely,

CGC, INC.

Michael N. Schultz, P.E.
Principal/Consulting Professional

William W. Wuellner, P.E.
Senior Geotechnical Engineer

Encl: Appendix A - Field Investigation
Appendix B - Soil Boring Location Map
Logs of Test Borings (4)
Log of Test Boring-General Notes
Unified Soil Classification System
Appendix C - Document Qualifications
Appendix D - Recommended Compacted Fill Specifications
Appendix E - Perimeter Underdrain Details
Appendix F - Rock Excavation Considerations

cc: Mr. Jim Moravec - Potter Lawson, Madison, WI

APPENDIX A

FIELD INVESTIGATION

APPENDIX A

FIELD INVESTIGATION

A total of four soil borings were drilled on September 16, 2003 at approximate locations selected by Potter Lawson and field-located by CGC. The approximate locations of the borings are shown on the Boring Location Map presented in Appendix B. The soil borings were drilled to depths of 10 to 13.7 ft by Badger State Drilling using a truck-mounted drill rig equipped with hollow-stem augers and an automatic hammer. Ground surface elevations were interpolated from a topographic map provided to CGC and should be considered approximate.

Soil samples were obtained at 2.5-ft intervals for a depth of 10 ft and at 5-ft intervals thereafter. The soil samples were obtained in general accordance with specifications for standard penetration testing, ASTM D 1586. The specific procedures used for drilling and sampling are described below.

1. Boring Procedures Between Samples

   The boring is extended downward, between samples, by a hollow-stem auger.

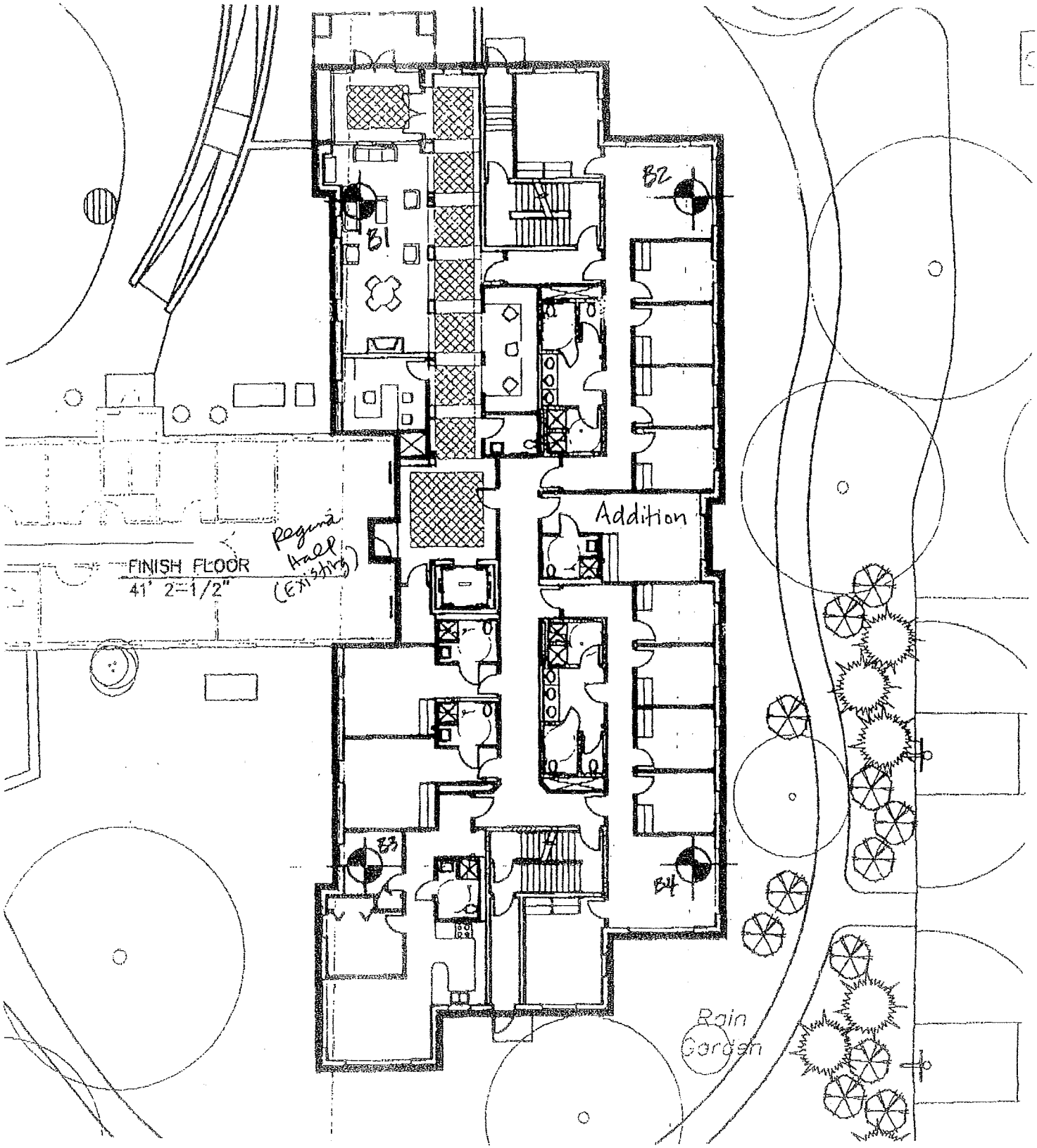
2. Standard Penetration Test and Split-Barrel Sampling of Soils
   (ASTM Designation: D 1586)

   This method consists of driving a 2-inch outside diameter split barrel sampler using a 140-pound weight falling freely through a distance of 30 inches. The sampler is first seated 6 inches into the material to be sampled and then driven 12 inches. The number of blows required to drive the sampler the final 12 inches is recorded on the log of borings and is known as the Standard Penetration Resistance. Recovered samples are first classified as to texture by the driller.

During the field exploration, the driller visually classified the soil and prepared a field log. *Field screening of the samples for possible environmental contaminants was not conducted by the drillers, as environmental site assessment activities were not part of CGC's work scope.* Water level observations were made in each boring during and after drilling and are shown at the bottom of each boring log. Upon completion of drilling, the borings were backfilled with bentonite in accordance with WDNR regulations, and the soil samples were delivered to our laboratory for visual classification and laboratory testing. The soils were visually classified by a geotechnical engineer using the Unified Soil Classification System. The final logs prepared by the engineer and a description of the Unified Soil Classification System are presented in Appendix B.

APPENDIX B

SOIL BORING LOCATION MAP
LOGS OF TEST BORINGS (4)
LOG OF TEST BORING - GENERAL NOTES
UNIFIED SOIL CLASSIFICATION SYSTEM



Legend

B1 Soil Boring Location and Number

Notes

1. Borings were performed by Badger State Drilling on September 16, 2003.
2. Base map provided by Potter Lawson.
3. Boring locations are approximate.

Scale: 1 in. = 20 ft

N

DWN: MNS	APP'D: WWW	Date: 9/03	C03232

CGC, Inc.

SOIL BORING LOCATION MAP
Regina Hall Expansion
Edgewood College Campus
Madison, Wisconsin

CGC Inc.

LOG OF TEST BORING

Project: Regina Hall Expansion
Edgewood College Campus
Location: Madison, Wisconsin

Boring No. 1
Surface Elevation (ft) 36+/-
Job No. C03232
Sheet 1 of 1

3011 PERRY STREET, MADISON, WIS. 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LI
						3" Asphalt Pavement/9" Base Course					
1		18	M	3		Stiff to Very Stiff, Brown Lean CLAY, Trace to Little Sand (CL)	(1.5)				
2		18	M	8	5		(3.0)				
3		18	M	11		Medium Dense, Brown Fine to Medium Sand, Some Gravel and Silt, Scattered Silt Layers (SM)					
4		17	M	17	10						
						DOLOMITE Bedrock					
5		1	M	100 /2"		End Boring & Auger Refusal @ 13.7'					
					15	Borehole backfilled with bentonite chips					
					20						

WATER LEVEL OBSERVATIONS

While Drilling ▽ NW Upon Completion of Drilling _____
Time After Drilling _____
Depth to Water _____ ▼
Depth to Cave in _____

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 9/16/03 End 9/16/03
Driller Badger Chief JT Rig CME-55
Logger JT Editor MNS
Drill Method 2 1/4" HSA

CGC Inc.

LOG OF TEST BORING

Project: Regina Hall Expansion
Edgewood College Campus
Location: Madison, Wisconsin

Boring No. 2
Surface Elevation (ft) 35.5+/-
Job No. C03232
Sheet 1 of 1

3011 PERRY STREET, MADISON, WIS. 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LI
						5" Black Silty TOPSOIL (OL)					
1		18	M	4		Very Stiff, Brown Lean CLAY, Trace Sand (CL)	(2.25)				
2		18	M	8			(3.5)				
					5						
						Medium Dense, Brown Fine to Medium Sand, Some Gravel and Silt, Scattered Silt Layers (SM)					
3		17	M	27							
4		18	M	18							
					10	Weathered DOLOMITE Bedrock					
						End Boring & Auger Refusal @ 10.5 ft					
						Borehole backfilled with bentonite chips					
					15						
					20						

WATER LEVEL OBSERVATIONS

While Drilling ▽ NW Upon Completion of Drilling
Time After Drilling
Depth to Water ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 9/16/03 End 9/16/03
Driller Badger Chief JT Rig CME-55
Logger JT Editor MNS
Drill Method 2 1/4" HSA

CGC Inc.

LOG OF TEST BORING

Project: Regina Hall Expansion
Edgewood College Campus
Location: Madison, Wisconsin

Boring No. 3
Surface Elevation (ft) 35+/-
Job No. C03232
Sheet 1 of 1

3011 PERRY STREET, MADISON, WIS. 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LI
						5" Black Silty TOPSOIL					
1		17	M	9		Loose, Brown Clayey SILT, Trace Sand (ML/CL-ML)					
2		18	M	18	5	Medium Dense, Brown Fine to Medium Sand, Some Gravel and Silt, Scattered Silt Layers (SM)					
3		17	M	24							
4		18	M	30	10						
						Weathered DOLOMITE Bedrock					
						End Boring & Auger Refusal at 11 ft					
						Borehole backfilled with bentonite chips					
					15						
					20						

WATER LEVEL OBSERVATIONS

While Drilling ▽ NW Upon Completion of Drilling
Time After Drilling
Depth to Water ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 9/16/03 End 9/16/03
Driller Badger Chief JT Rig CME-55
Logger JT Editor MNS
Drill Method 2 1/4" HSA

CGC Inc.

LOG OF TEST BORING

Project: Regina Hall Expansion
Edgewood College Campus
Location: Madison, Wisconsin

Boring No. 4
Surface Elevation (ft) 33.5+/-
Job No. C03232
Sheet 1 of 1

3011 PERRY STREET, MADISON, WIS. 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LI
						6" Black Silty TOPSOIL (OL)					
1		18	M	10		Loose, Brown Clayey SILT, Trace Sand (ML/CL-ML)					
						Loose, Brown Clayey SAND, Trace Gravel (SC)					
2		17	M	8							
					5		•				
						Medium Dense, Brown Fine to Medium Sand, Some Gravel and Silt, Scattered Silt Layers (SM)					
3		18	M	12							
4		11	M	124 /8"							
					10	DOLOMITE Bedrock					
						End Boring & Auger Refusal at 10 ft					
						Borehole backfilled with bentonite chips					
					15						
					20						

WATER LEVEL OBSERVATIONS

While Drilling ▽ NW Upon Completion of Drilling _____
Time After Drilling _____
Depth to Water _____ ▼
Depth to Cave in _____

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 9/16/03 End 9/16/03
Driller Badger Chief JT Rig CME-55
Logger JT Editor MNS
Drill Method 2 1/4" HSA

CGC, Inc.

LOG OF TEST BORING

General Notes

Descriptive Soil Classification

GRAIN SIZE TERMINOLOGY

Soil Fraction	Particle Size	U.S. Standard Sieve Size
Boulders	Larger than 12"	Larger than 12"
Cobbles	3" to 12"	3" to 12"
Gravel: Coarse	3/4" to 3"	3/4" to 3"
Fine	4.76 mm to 3/4"	#4 to 3/4"
Sand: Coarse	2.00 mm to 4.76 mm	#10 to #4
Medium	0.42 to mm to 2.00 mm	#40 to #10
Fine	0.074 mm to 0.42 mm	#200 to #40
Silt	0.005 mm to 0.074 mm	Smaller than #200
Clay	Smaller than 0.005 mm	Smaller than #200

Plasticity characteristics differentiate between silt and clay.

GENERAL TERMINOLOGY

Physical Characteristics
Color, moisture, grain shape, fineness, etc.
Major Constituents
Clay, silt, sand, gravel
Structure
Laminated, varved, fibrous, stratified, cemented, fissured, etc.
Geologic Origin
Glacial, alluvial, eolian, residual, etc.

RELATIVE DENSITY

Term	"N" Value
Very Loose	0-4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	Over 50

RELATIVE PROPORTIONS OF OF COHESIONLESS SOILS

Proportional Term	Defining Range by Percentage of Weight
Trace	0%-5%
Little	5%-12%
Some	12%-35%
And	35%-50%

CONSISTENCY

Term	q_u-tons/sq. ft.
Very Soft	0.0 to 0.25
Soft	0.25 to 0.50
Medium	0.50 to 1.0
Stiff	1.0 to 2.0
Very Stiff	2.0 to 4.0
Hard	Over 4.0

ORGANIC CONTENT BY COMBUSTION METHOD

Soil Description	Loss on Ignition
Non Organic	Less than 4%
Organic Silt/Clay	4-12%
Sedimentary Peat	12-50%
Fibrous and Woody Peat	More than 50%

PLASTICITY

Term	Plastic Index
None to Slight	0-4
Slight	5-7
Medium	8-22
High to Very High	Over 22

The penetration resistance, N, is the summation of the number of blows required to effect two successive 6" penetrations of the 2" split-barrel sampler. The sampler is driven with a 140 lb. weight falling 30" and is seated to a depth of 6" before commencing the standard penetration test.

SYMBOLS

DRILLING AND SAMPLING

CS--Continuous Sampling
RC--Rock Coring: Size AW, BW, NW, 2"W
RQD--Rock Quality Designator
RB--Rock Bit
FT--Fish Tail
DC--Drove Casing
C--Casing: Size 2 1/2", NW, 4", HW
CW--Clear Water
DM--Drilling Mud
HSA--Hollow Stem Auger
FA--Flight Auger
HA--Hand Auger
COA--Clean-Out Auger
SS--2" Diameter Split-Barrel Sample
2ST--2" Diameter Thin-Walled Tube Sample
3ST--3" Diameter Thin-Walled Tube Sample
PT--3" Diameter Piston Tube Sample
AS--Auger Sample
WS--Wash Sample
PTS--Peat Sample
PS--Pitcher Sample
NR--No Recovery
S--Sounding
PMT--Borehole Pressuremeter Test
VS--Vane Shear Test
WPT--Water Pressure Test

LABORATORY TESTS

q_a--Penetrometer Reading, tons/sq. ft.
q_u--Unconfined Strength, tons/sq. ft.
W--Moisture Content, %
LL--Liquid Limit, %
PL--Plastic Limit, %
SL--Shrinkage Limit, %
LI--Loss on Ignition, %
D--Dry Unit Weight, lbs/cu. ft.
pH--Measure of Soil Alkalinity or Acidity
FS--Free Swell, %

WATER LEVEL MEASUREMENT

∇ --Water Level at time shown
NW--No Water Encountered
WD--While Drilling
BCR--Before Casing Removal
ACR--After Casing Removal
CW--Caved and Wet
CM--Caved and Moist

Note: Water level measurements shown on the boring logs represent conditions at the time indicated and may not reflect static levels, especially in cohesive soils.

UNIFIED SOIL CLASSIFICATION SYSTEM

COARSE-GRAINED SOILS

(More than half of material is larger than No. 200 seive size.)

GRAVELS More than half of coarse fraction larger than No. 4 sieve size	**Clean Gravels** (Little or no fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
		GP	Poorly graded gravels, gravel-sand mixtures, little or no fines
	Gravels with Fines (Appreciable amount of fines)	GM^{d}_{u}	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
SANDS More than half of coarse fraction smaller than No. 4 sieve size	**Clean Sands** (Little or no fines)	SW	Well-graded sands, gravelly sands, little or no fines
		SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with Fines (Appreciable amount of fines)	SM^{d}_{u}	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures

FINE-GRAINED SOILS

(More than half of material is smaller than No. 200 sieve.)

SILTS AND CLAYS Liquid limit less than 50%	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
	OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit greater than 50%	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
	CH	Inorganic clays of high plasticity, fat clays
	OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS	PT	Peat and other highly organic soils

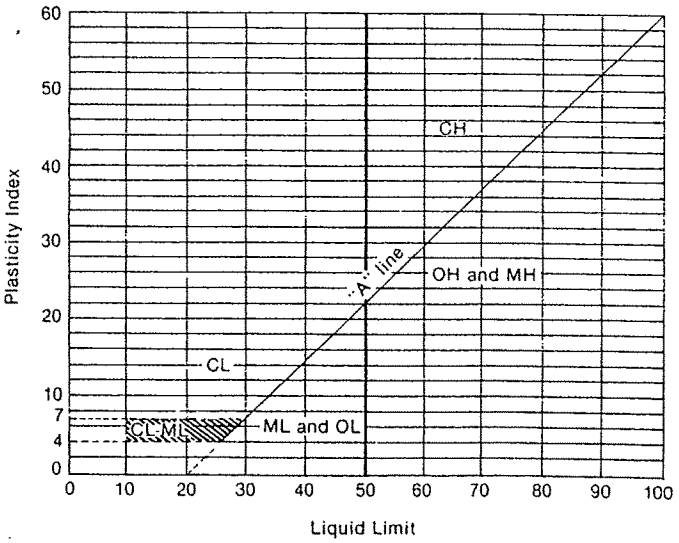
LABORATORY CLASSIFICATION CRITERIA

GW	$C_U = \frac{D_{60}}{D_{10}}$ greater than 4; $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3	
GP	Not meeting all gradation requirements for GW	
GM	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
GC	Atterberg limits above "A" line with P.I. greater than 7	
SW	$C_U = \frac{D_{60}}{D_{10}}$ greater than 6; $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3	
SP	Not meeting all gradation requirements for SW	
SM	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in hatched zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
SC	Atterberg limits above "A" line with P.I. greater than 7	

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 per cent	GW, GP, SW, SP
More than 12 per cent	GM, GC, SM, SC
5 to 12 per cent	Borderline cases requiring dual symbols

PLASTICITY CHART



For classification of fine-grained soils and fine fraction of coarse-grained soils.

Atterberg Limits plotting in hatched area are borderline classifications requiring use of dual symbols.

Equation of A-line: PI = 0.73 (LL - 20)

6

SECTION SIX

Attachments

Attachments

Plans:

- CD-01 Cover Drawing
- Site Survey
- C000 First Floor Plan & Existing Site Overlay
- C100 Erosion Control & Demolition Plan
- C200 Site Layout Plan
- C300 Grading & Drainage Plan
- C400 Utility Plan
- C500 Landscape Plan
- C600 Details
- C601 Details
- C602 Details
- C603 Details
- D101 Demo Plans
- A100 Basement / First Floor Plan
- A101 Second / Third Floor Plan
- A121 Penthouse / Roof Plan
- A201 Building Elevations
- A202 Building Elevations
- E003 Electrical Site Plan