

Green Schools Guide Construction Phase Submission

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Learning Objectives

- **Understand SCA Sustainability Submission procedures.**
- **Understand the Green Schools Guide (GSG) Construction Phase Submittal requirements**
 - Contractor's Responsibilities
 - Designer's Responsibilities
 - PO's Responsibilities

GSG Construction Phase Process

Contractor's Responsibilities

Designer's Responsibilities

PO's Responsibilities

An Integrated and Collaborative Process

Construction Process and Submission

- **Contractor Responsibilities**

- Engage a LEED AP to collect Green data and support the Contractor team in meeting its obligations – Section S01400
- Participate in GSG Kick-off meeting and provide updates on the green measures of the Contract at the bi-weekly construction meetings - The Contractor's LEED AP should be in attendance monthly
- Perform work and document sustainability measures by annotated photos
 - Section 02200 for Erosion Protection
 - Sections S01550 for Protection of Materials and Building Flush Out
 - Flush out is required. Needs to be scheduled and documented.
 - Section S01560 for Installation Sequence for Materials

Construction Process and Submission

- **Contractor Responsibilities**
 - Prior to TCO, make a complete submission through the PO to the designer's LEED AP for inclusion in the Construction Phase submission
 - Credit Forms
 - Signed GSG Construction Phase Certification
 - Back-up Information
 - Rough Air Balancing Report
 - Flushout Letter Signed and Dated

Construction Process and Submission

- **Architect of Record Responsibilities**
 - Participate in GSG Construction Kick-off Meeting
 - Include Sustainability as an agenda item in the Bi-weekly meetings. Designer's LEED AP to attend monthly.
 - Support CM in ensuring monthly submissions are being made by the Contractor
 - Support CM in ensuring Contractor is implementing required sustainability measures and documenting, such as taking photos, making submissions

Construction Process and Submission

- **Architect of Record Responsibilities**
 - Collect and document the information required to be collected throughout the construction period, not at the end
 - Collect Contractor summary forms and affidavits before TCO
 - Make Full submission of all credits at TCO to the GSG Committee

Construction Process and Submission

- **Project Officer Responsibilities**

- Ensure Contractor has hired LEED AP within 4 weeks of NTP.
- Organize a GSG Construction Kick-off meeting 6 weeks from NTP.
- Ensure Sustainability is an agenda item in the Bi-weekly Construction Meetings and thoroughly discussed
- Ensure monthly submissions are being made by the Contractor with the Request for Payment
 - Waste Management
 - Recycled and Regional Content
- Withhold payment approvals if GSG submissions are not being met.

Construction Process and Submission

- **Project Officer Responsibilities**
 - Ensure implementation of sustainability measures and documentation
 - Installation, submissions, photos
 - Ensure Contractor summary forms and affidavits are provided to the Designer before TCO.
 - Participate in GSG Construction Phase Review Meetings at SCA office.
 - Ensure Contractor is present, if requested
 - Ensure Contractor follows up and submits missing information

Construction Phase Submittal – What to Include

- Table of Contents
- Updated Checklist
- Meeting Minutes with Detailed Design Team Response (for previous submission comments)
- Design Team Certification Form
- Contractor's Certification Form
- Updated Compliance Narratives
- Supporting Documentation

Tip: Put a page number on every page submitted! Feel free to hand write them in if it is easier.

Overall Submittal Style -

- **2 Acceptable Methods –**
 - Provide all Project Narratives with the Supporting Documentation attached directly after the Narrative.

OR

- Provide all Project Narratives and have the Supporting Documentation in a separate section.
- If separated, then provide a detailed Table of Contents with page numbers called out.

Updated Checklist

- Check the Checklist Complies with all Narratives.
- Check that all Prereq. Credits have been checked 'Yes' or 'No'.
- Make sure the Header is filled out with all of the project information and correct Submission – Const.
- Verify that the Checklist being used is the correct guide (e.g. 2007, 2009, or 2016)
- Make sure that the Checklist and Certification forms match.

Design Team Certification Form

- Make sure Architect's and Engineer's Statements are signed...

Architect's Statement - Construction Phase:

As Architect of Record, I verify that the statements initiated by me on the following pages are accurate to the best of my knowledge.

Narratives for all credits have been provided and updated as necessary with the final design submission.

Calculations have been provided, according to the credit requirements, and updated as necessary with the final design submission.

JOSE J. RICARDO ARCHITECT "C" [Signature] 2/27/18
Name Title Signature Date

Engineer's Statement - Construction Phase:

As Engineer of Record, I verify that the statements initiated by me on the following pages are accurate to the best of my knowledge.

Narratives for all credits have been provided and updated as necessary with the final design submission.

Calculations have been provided, according to the credit requirements, and updated as necessary with the final design submission.

RICHARD XIAO ENGINEER "C" [Signature] 02/27/18
Name Title Signature Date

Design Team Certification Form – Cont.

- Make sure Documented Credits are Initialed and any necessary boxes checked...

_____ **M1.4 - Building Reuse, Maintain Interior Non-Structural Elements**
On this project, 50% of the existing interior non-structural elements from the existing building were reused. I have provided a completed copy of the Building Reuse Form.

JR _____ **M2.1R - Recycled Content**
The materials for this project include 10% or more recycled content. A Recycled Content Summary Form has been submitted as documentation.

☐ 20%

JR _____ **M2.3 - Regional Materials**
The materials for this project include 10% or more regional materials (extra A Regional Materials Summary Form has been submitted as documentation.

☐ 20%

Indoor Environmental Quality

JR _____ **Q3.1R - Low Emitting Materials, Adhesives and Sealants**
All adhesives and sealants used on the interior of the building comply with Low Emitting Materials - Summary Form has been submitted as document

Tip: Architect's LEED AP can highlight the lines that need to be initialed and check the boxes for the Architect and Engineer

Contractors Certification Form

- Make sure Contractor's Statement is signed, credits initialed, and boxes checked...

Contractor's Statement

I verify that the sustainable requirements summarized below have been achieved.

Frank Gaudio
Name

Project Engineer
Title

Signature

12/14/17
Date

Contractor's
Initiale

FG FG
Site

S 1.1R - Construction Activity Pollution Prevention

☒ An erosion and sedimentation control plan complying with NYS DEC SPDES General Construction Activity, including measures from NYS DEC Standards and Specifications for Sediment Control in accordance with the specification Section 02200, was implemented.

OR

☐ Project is completely interior and a dust control plan has been submitted in accordance with specification Section S01900 and such plan was implemented.

Materials

FG FG

M 1.5R - Construction Waste Management 50%

The project implements a waste management plan that diverts 50% of the construction waste from landfills and incinerators. A Construction Waste Management Plan and calculation table submitted as documentation in accordance with Specification Section S01524.

Tip: Contractor's LEED AP can highlight the lines that need to be initialed and check the boxes for the GC

Construction Process and Submission

- **Tools to Use for the GSG process**
 - Specifications – Actual forms and contractual requirements in S01352 and other sections
 - Contractor Construction Phase Toolkit
 - Based on Specification Sections
 - Lists the requirements for Contractor to do with a checklist - References the GSG credit
 - Architect-PO Construction Phase Toolkit.
 - Based on GSG Credits
 - Lists the requirements for the Designer to do with a checklist - References the specification sections

Construction Process and Submission

• Contractor Construction Phase Toolkit

S01550 Indoor Air Quality Requirements

S01560 Installation Sequence of Finish Materials

Contractor to develop and implement a Construction Indoor Air Quality Plan in accordance with *SMACNA IAQ Guidelines For Buildings Under Construction, 2nd Edition 2007, Chapter 3*. Control measures include the following:

- HVAC Protection
- Source Control
- Pathway Interruption
- Housekeeping
- Sequencing and Scheduling

Permanently installed air handling equipment is generally not to be used during construction. If equipment is approved by the SCA to be used, install MERV 8 filters at each return-air inlet. Replace all RTU/AHU/DOAS/DRU unit filters prior to occupancy if HVAC equipment is used during construction.

After construction ends, but prior to occupancy and with all the interior finishes installed, perform a full building flush-out. Project will need to supply the total air volume of 14,000 cu-ft of outdoor air per sq-ft of floor area while maintaining an internal temperature of 60°F and a relative humidity no higher than 60%. There are two possible paths outlined in Section S01550 for the Contractor to utilize to meet this requirement.

Contractor Responsibilities:

- Develop a Construction Indoor Air Quality Management Plan. Plan must be submitted to AOR for review before building is enclosed. Upon request, the AOR may provide sample plan for Contractor to edit.
- Take photos of at least six (6) different SMACNA IAQ measures during construction. Contractor may utilize Form r-06 Q2.1 IAQ Photo Tracking Matrix, as modified for project requirements, to track the requisite items.
- Submit cut sheets of filtration media proposed for use.
- Complete table under Credit Q2.1R in r-05 Contractor's Certification Form and initial.

Construction Process and Submission

- Architect-PO's Construction Phase Toolkit

GSG Credit: Q2.1R – Construction IAQ Management Plan, During Construction

PO to verify that Contractor implements all measures required by the Construction Indoor Air Quality (CIAQ) Management Plan.

PO to verify the following; AOR to indicate status by completing boxes/blanks below:

- ☐ **Construction Indoor Air Quality (CIAQ) Management Plan** has been developed and submitted by Contractor to AOR for review before building is enclosed. (AOR may provide sample plan for Contractor to edit.) During construction, Contractor has submitted cut sheets of filtration media proposed for use to AOR for review and tracking. ⌚ *Pre-Construction Activity*
Date:
- ☐ **Contractor's Digital Photos** showing different SMACNA IAQ measures implemented during construction have been provided to AOR for review and tracking. At least six (6) photos dated and annotated to indicate specific measures have been provided. ⌚ *During-Construction Activity*
Date:
- ☐ **r-05 Contractor's Certification Form** for this credit has been completed and initialed by Contractor, and provided to AOR for inclusion in the GSG Construction Phase submission. ⌚ *Pre-TCO Activity*
Date:

Specification Reference:

S01550 Indoor Air Quality Requirements

S01560 Installation Sequence of Finish Materials

Additional Tips and suggestions -

- **Use the Correct Project Cost for Division 2-10 on your recycled content and regional materials forms... fill out all columns.**
- **Date and annotate the photos submitted for any credit documentation.**
- **The design team need not wait for Measurement and Verification to be completed prior to submitting the Construction Phase Submission.**
- **Submit approved Rough Air Balancing Report necessary prior to TCO in order to submit to GSG Committee earlier.**

Sustainable Booklet - best practices

- **For Construction Phase – Submit 4 hard copies at Initial**
- **Use plastic reusable spiral bound binding.**
- **Limit the use of tabs and cardstock**
- **Normal weight, standard printer paper is preferred.**
- **Printing on both sides a must.**
- **Most pages other than those with pictures and the checklist don't need to be printed in color.**
- **Only submit samples of waste management collection receipts and sample Material Submittal documents. (Retain full records to be produced upon request.)**