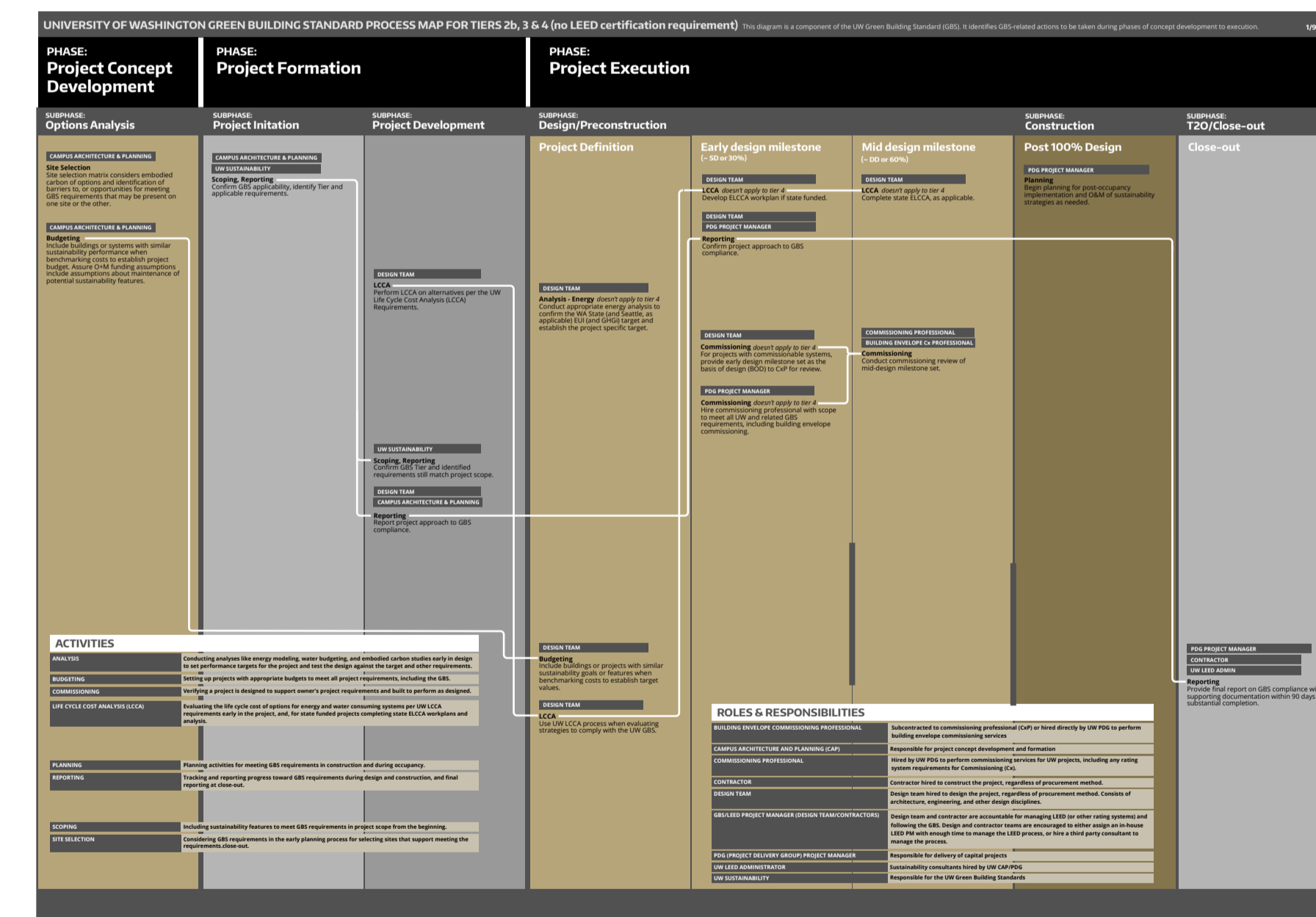
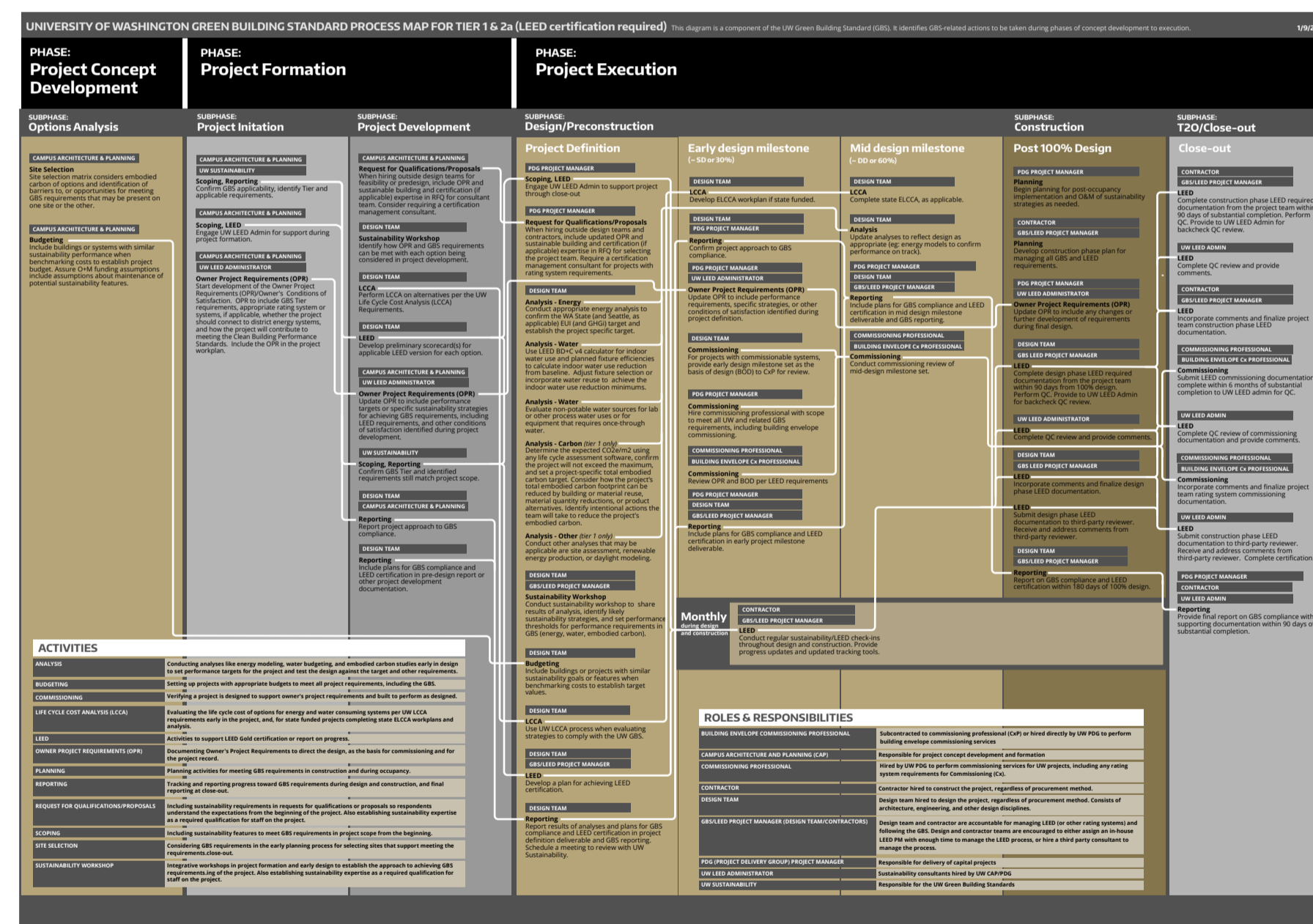


UNIVERSITY OF WASHINGTON GREEN BUILDING STANDARD PROCESS MAP

This diagram is a component of the UW Green Building Standard (GBS). It identifies GBS-related actions to be taken during phases of concept development to execution.

One page is FOR TIER 1 & 2a (projects for which LEED certification is required)

One page is FOR TIERS 2b, 3 & 4 (projects for which no LEED certification is required)



VIEWING TIP:

If you are viewing this document using Adobe Acrobat Pro/Reader (or other reader that allows you to view layers such as BlueBeam, you will find that you can turn off layers for each ROLE/RESPONSIBILITY and/or each ACTIVITY to help see these in isolation.

PHASE: Project Concept Development

PHASE: Project Formation

PHASE: Project Execution

SUBPHASE: Options Analysis

SUBPHASE: Project Initiation

SUBPHASE: Project Development

SUBPHASE: Design/Preconstruction

SUBPHASE: Construction

SUBPHASE: T20/Close-out

CAMPUS ARCHITECTURE & PLANNING

Site Selection
Site selection matrix considers embodied carbon of options and identification of barriers to, or opportunities for meeting GBS requirements that may be present on one site or the other.

CAMPUS ARCHITECTURE & PLANNING

Budgeting
Include buildings or systems with similar sustainability performance when benchmarking costs to establish project budget. Assure O+M funding assumptions include assumptions about maintenance of potential sustainability features.

CAMPUS ARCHITECTURE & PLANNING

UW SUSTAINABILITY

Scoping, Reporting
Confirm GBS applicability, identify Tier and applicable requirements.

CAMPUS ARCHITECTURE & PLANNING

Scoping, LEED
Engage UW LEED Admin for support during project formation.

CAMPUS ARCHITECTURE & PLANNING

UW LEED ADMINISTRATOR

Owner Project Requirements (OPR)
Start development of the Owner Project Requirements (OPR)/Owner's Conditions of Satisfaction. OPR to include GBS Tier requirements, appropriate rating system or systems, if applicable, whether the project should connect to district energy systems, and how the project will contribute to meeting the Clean Building Performance Standards. Include the OPR in the project workplan.

CAMPUS ARCHITECTURE & PLANNING

Request for Qualifications/Proposals
When hiring outside design teams for feasibility or pre-design, include OPR and sustainable building and certification (if applicable) expertise in RFQ for consultant team. Consider requiring a certification management consultant.

DESIGN TEAM

Sustainability Workshop
Identify how OPR and GBS requirements can be met with each option being considered in project development.

DESIGN TEAM

LCCA
Perform LCCA on alternatives per the UW Life Cycle Cost Analysis (LCCA) Requirements.

DESIGN TEAM

LEED
Develop preliminary scorecard(s) for applicable LEED version for each option.

CAMPUS ARCHITECTURE & PLANNING

UW LEED ADMINISTRATOR

Owner Project Requirements (OPR)
Update OPR to include performance targets or specific sustainability strategies for achieving GBS requirements, including LEED requirements, and other conditions of satisfaction identified during project development.

UW SUSTAINABILITY

Scoping, Reporting
Confirm GBS Tier and identified requirements still match project scope.

DESIGN TEAM

CAMPUS ARCHITECTURE & PLANNING

Reporting
Report project approach to GBS compliance.

DESIGN TEAM

Reporting
Include plans for GBS compliance and LEED certification in pre-design report or other project development documentation.

Project Definition

PDG PROJECT MANAGER

Scoping, LEED
Engage UW LEED Admin to support project through close-out

PDG PROJECT MANAGER

Request for Qualifications/Proposals
When hiring outside design teams and contractors, include updated OPR and sustainable building and certification (if applicable) expertise in RFQ for selecting the project team. Require a certification management consultant for projects with rating system requirements.

DESIGN TEAM

Analysis - Energy
Conduct appropriate energy analysis to confirm the WA State (and Seattle, as applicable) EUI (and GHGI) target and establish the project specific target.

Analysis - Water
Use LEED BD+C v4 calculator for indoor water use and planned fixture efficiencies to calculate indoor water use reduction from baseline. Adjust fixture selection or incorporate water reuse to achieve the indoor water use reduction minimums.

Analysis - Water
Evaluate non-potable water sources for lab or other process water uses or for equipment that requires once-through water.

Analysis - Carbon (tier 1 only)
Determine the expected CO2e/m2 using any life cycle assessment software, confirm the project will not exceed the maximum, and set a project-specific total embodied carbon target. Consider how the project's total embodied carbon footprint can be reduced by building or material reuse, material quantity reductions, or product alternatives. Identify intentional actions the team will take to reduce the project's embodied carbon.

Analysis - Other (tier 1 only)
Conduct other analyses that may be applicable are site assessment, renewable energy production, or daylight modeling.

DESIGN TEAM

GBS/LEED PROJECT MANAGER

Sustainability Workshop
Conduct sustainability workshop to share results of analysis, identify likely sustainability strategies, and set performance thresholds for performance requirements in GBS (energy, water, embodied carbon).

DESIGN TEAM

Budgeting
Include buildings or projects with similar sustainability goals or features when benchmarking costs to establish target values.

DESIGN TEAM

LCCA
Use UW LCCA process when evaluating strategies to comply with the UW GBS.

DESIGN TEAM

GBS/LEED PROJECT MANAGER

LEED
Develop a plan for achieving LEED certification.

DESIGN TEAM

Reporting
Report results of analyses and plans for GBS compliance and LEED certification in project definition deliverable and GBS reporting. Schedule a meeting to review with UW Sustainability.

Early design milestone (~ SD or 30%)

DESIGN TEAM

LCCA
Develop ELCCA workplan if state funded.

DESIGN TEAM

PDG PROJECT MANAGER

Reporting
Confirm project approach to GBS compliance.

PDG PROJECT MANAGER

UW LEED ADMINISTRATOR

Owner Project Requirements (OPR)
Update OPR to include performance requirements, specific strategies, or other conditions of satisfaction identified during project definition.

DESIGN TEAM

Commissioning
For projects with commissionable systems, provide early design milestone set as the basis of design (BOD) to CxP for review.

PDG PROJECT MANAGER

Commissioning
Hire commissioning professional with scope to meet all UW and related GBS requirements, including building envelope commissioning.

COMMISSIONING PROFESSIONAL

BUILDING ENVELOPE Cx PROFESSIONAL

Commissioning
Review OPR and BOD per LEED requirements

PDG PROJECT MANAGER

DESIGN TEAM

GBS/LEED PROJECT MANAGER

Reporting
Include plans for GBS compliance and LEED certification in early project milestone deliverable.

Monthly during design and construction

CONTRACTOR

GBS/LEED PROJECT MANAGER

LEED
Conduct regular sustainability/LEED check-ins throughout design and construction. Provide progress updates and updated tracking tools.

Mid design milestone (~ DD or 60%)

DESIGN TEAM

LCCA
Complete state ELCCA, as applicable.

DESIGN TEAM

Analysis
Update analyses to reflect design as appropriate (eg: energy models to confirm performance on track).

PDG PROJECT MANAGER

DESIGN TEAM

GBS/LEED PROJECT MANAGER

Reporting
Include plans for GBS compliance and LEED certification in mid design milestone deliverable and GBS reporting.

COMMISSIONING PROFESSIONAL

BUILDING ENVELOPE Cx PROFESSIONAL

Commissioning
Conduct commissioning review of mid-design milestone set.

Post 100% Design

PDG PROJECT MANAGER

Planning
Begin planning for post-occupancy implementation and O&M of sustainability strategies as needed.

CONTRACTOR

GBS/LEED PROJECT MANAGER

Planning
Develop construction phase plan for managing all GBS and LEED requirements.

PDG PROJECT MANAGER

UW LEED ADMINISTRATOR

Owner Project Requirements (OPR)
Update OPR to include any changes or further development of requirements during final design.

DESIGN TEAM

GBS/LEED PROJECT MANAGER

LEED
Complete design phase LEED required documentation from the project team within 90 days from 100% design. Perform QC. Provide to UW LEED Admin for backcheck QC review.

UW LEED ADMINISTRATOR

LEED
Complete QC review and provide comments.

DESIGN TEAM

GBS/LEED PROJECT MANAGER

LEED
Incorporate comments and finalize design phase LEED documentation.

LEED

Submit design phase LEED documentation to third-party reviewer. Receive and address comments from third-party reviewer.

DESIGN TEAM

GBS/LEED PROJECT MANAGER

Reporting
Report on GBS compliance and LEED certification within 180 days of 100% design.

Close-out

CONTRACTOR

GBS/LEED PROJECT MANAGER

LEED
Complete construction phase LEED required documentation from the project team within 90 days of substantial completion. Perform QC. Provide to UW LEED Admin for backcheck QC review.

UW LEED ADMIN

LEED
Complete QC review and provide comments.

CONTRACTOR

GBS/LEED PROJECT MANAGER

LEED
Incorporate comments and finalize project team construction phase LEED documentation.

COMMISSIONING PROFESSIONAL

BUILDING ENVELOPE Cx PROFESSIONAL

Commissioning
Submit LEED commissioning documentation complete within 6 months of substantial completion to UW LEED admin for QC.

UW LEED ADMIN

LEED
Complete QC review of commissioning documentation and provide comments.

COMMISSIONING PROFESSIONAL

BUILDING ENVELOPE Cx PROFESSIONAL

Commissioning
Incorporate comments and finalize project team rating system commissioning documentation.

UW LEED ADMIN

LEED
Submit construction phase LEED documentation to third-party reviewer. Receive and address comments from third-party reviewer. Complete certification.

PDG PROJECT MANAGER

CONTRACTOR

UW LEED ADMIN

Reporting
Provide final report on GBS compliance with supporting documentation within 90 days of substantial completion.

| ACTIVITIES | |
|--------------------------------------|--|
| ANALYSIS | Conducting analyses like energy modeling, water budgeting, and embodied carbon studies early in design to set performance targets for the project and test the design against the target and other requirements. |
| BUDGETING | Setting up projects with appropriate budgets to meet all project requirements, including the GBS. |
| COMMISSIONING | Verifying a project is designed to support owner's project requirements and built to perform as designed. |
| LIFE CYCLE COST ANALYSIS (LCCA) | Evaluating the life cycle cost of options for energy and water consuming systems per UW LCCA requirements early in the project, and, for state funded projects completing state ELCCA workplans and analysis. |
| LEED | Activities to support LEED Gold certification or report on progress. |
| OWNER PROJECT REQUIREMENTS (OPR) | Documenting Owner's Project Requirements to direct the design, as the basis for commissioning and for the project record. |
| PLANNING | Planning activities for meeting GBS requirements in construction and during occupancy. |
| REPORTING | Tracking and reporting progress toward GBS requirements during design and construction, and final reporting at close-out. |
| REQUEST FOR QUALIFICATIONS/PROPOSALS | Including sustainability requirements in requests for qualifications or proposals so respondents understand the expectations from the beginning of the project. Also establishing sustainability expertise as a required qualification for staff on the project. |
| SCOPING | Including sustainability features to meet GBS requirements in project scope from the beginning. |
| SITE SELECTION | Considering GBS requirements in the early planning process for selecting sites that support meeting the requirements.close-out. |
| SUSTAINABILITY WORKSHOP | Integrative workshops in project formation and early design to establish the approach to achieving GBS requirements.ing of the project. Also establishing sustainability expertise as a required qualification for staff on the project. |

| ROLES & RESPONSIBILITIES | |
|--|--|
| BUILDING ENVELOPE COMMISSIONING PROFESSIONAL | Subcontracted to commissioning professional (CxP) or hired directly by UW PDG to perform building envelope commissioning services |
| CAMPUS ARCHITECTURE AND PLANNING (CAP) | Responsible for project concept development and formation |
| COMMISSIONING PROFESSIONAL | Hired by UW PDG to perform commissioning services for UW projects, including any rating system requirements for Commissioning (Cx). |
| CONTRACTOR | Contractor hired to construct the project, regardless of procurement method. |
| DESIGN TEAM | Design team hired to design the project, regardless of procurement method. Consists of architecture, engineering, and other design disciplines. |
| GBS/LEED PROJECT MANAGER (DESIGN TEAM/CONTRACTORS) | Design team and contractor are accountable for managing LEED (or other rating systems) and following the GBS. Design and contractor teams are encouraged to either assign an in-house LEED PM with enough time to manage the LEED process, or hire a third party consultant to manage the process. |
| PDG (PROJECT DELIVERY GROUP) PROJECT MANAGER | Responsible for delivery of capital projects |
| UW LEED ADMINISTRATOR | Sustainability consultants hired by UW CAP/PDG |
| UW SUSTAINABILITY | Responsible for the UW Green Building Standards |

PHASE:
Project Concept Development

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Options Analysis

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Design/Preconstruction

SUBPHASE:
Early design milestone (~ SD or 30%)

SUBPHASE:
Mid design milestone (~ DD or 60%)

SUBPHASE:
Construction

SUBPHASE:
T20/Close-out

CAMPUS ARCHITECTURE & PLANNING

Site Selection
Site selection matrix considers embodied carbon of options and identification of barriers to, or opportunities for meeting GBS requirements that may be present on one site or the other.

Budgeting
Include buildings or systems with similar sustainability performance when benchmarking costs to establish project budget. Assure O+M funding assumptions include assumptions about maintenance of potential sustainability features.

CAMPUS ARCHITECTURE & PLANNING

UW SUSTAINABILITY

Scoping, Reporting
Confirm GBS applicability, identify Tier and applicable requirements.

DESIGN TEAM

LCCA
Perform LCCA on alternatives per the UW Life Cycle Cost Analysis (LCCA) Requirements.

UW SUSTAINABILITY

Scoping, Reporting
Confirm GBS Tier and identified requirements still match project scope.

DESIGN TEAM

CAMPUS ARCHITECTURE & PLANNING

Reporting
Report project approach to GBS compliance.

DESIGN TEAM

Analysis - Energy *doesn't apply to tier 4*
Conduct appropriate energy analysis to confirm the WA State (and Seattle, as applicable) EUI (and GHG) target and establish the project specific target.

DESIGN TEAM

LCCA *doesn't apply to tier 4*
Develop ELCCA workplan if state funded.

DESIGN TEAM

PDG PROJECT MANAGER

Reporting
Confirm project approach to GBS compliance.

DESIGN TEAM

Commissioning *doesn't apply to tier 4*
For projects with commissionable systems, provide early design milestone set as the basis of design (BOD) to CxP for review.

PDG PROJECT MANAGER

Commissioning *doesn't apply to tier 4*
Hire commissioning professional with scope to meet all UW and related GBS requirements, including building envelope commissioning.

DESIGN TEAM

LCCA *doesn't apply to tier 4*
Complete state ELCCA, as applicable.

COMMISSIONING PROFESSIONAL

BUILDING ENVELOPE Cx PROFESSIONAL

Commissioning
Conduct commissioning review of mid-design milestone set.

PDG PROJECT MANAGER

Planning
Begin planning for post-occupancy implementation and O&M of sustainability strategies as needed.

Close-out

PDG PROJECT MANAGER

CONTRACTOR

UW LEED ADMIN

Reporting
Provide final report on GBS compliance with supporting documentation within 90 days of substantial completion.

| ACTIVITIES | |
|---------------------------------|--|
| ANALYSIS | Conducting analyses like energy modeling, water budgeting, and embodied carbon studies early in design to set performance targets for the project and test the design against the target and other requirements. |
| BUDGETING | Setting up projects with appropriate budgets to meet all project requirements, including the GBS. |
| COMMISSIONING | Verifying a project is designed to support owner's project requirements and built to perform as designed. |
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| SITE SELECTION | Considering GBS requirements in the early planning process for selecting sites that support meeting the requirements.close-out. |

DESIGN TEAM

Budgeting
Include buildings or projects with similar sustainability goals or features when benchmarking costs to establish target values.

DESIGN TEAM

LCCA
Use UW LCCA process when evaluating strategies to comply with the UW GBS.

| ROLES & RESPONSIBILITIES | |
|--|--|
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PDG PROJECT MANAGER

CONTRACTOR

UW LEED ADMIN

Reporting
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