



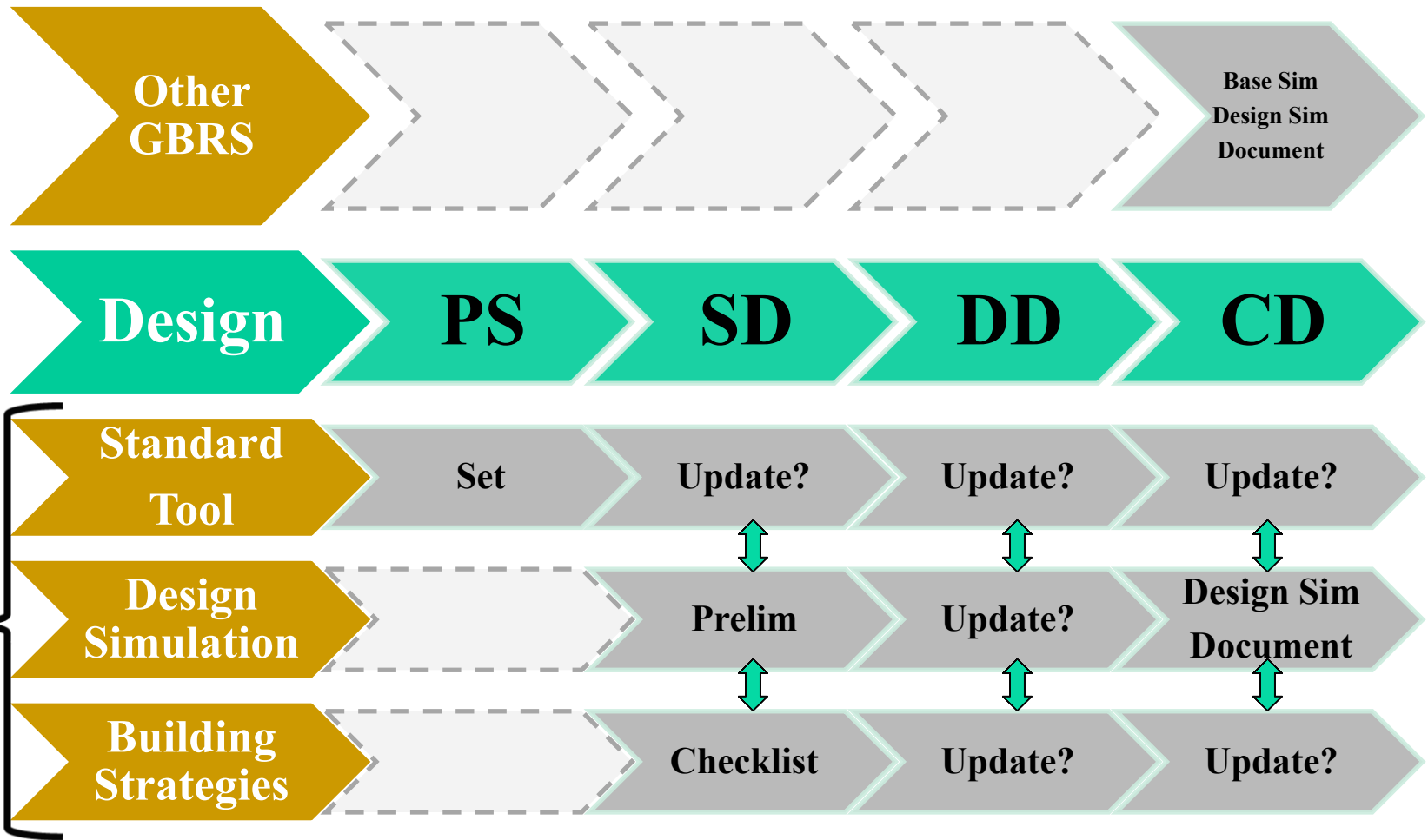
SB2030

Project Documentation

and Verification

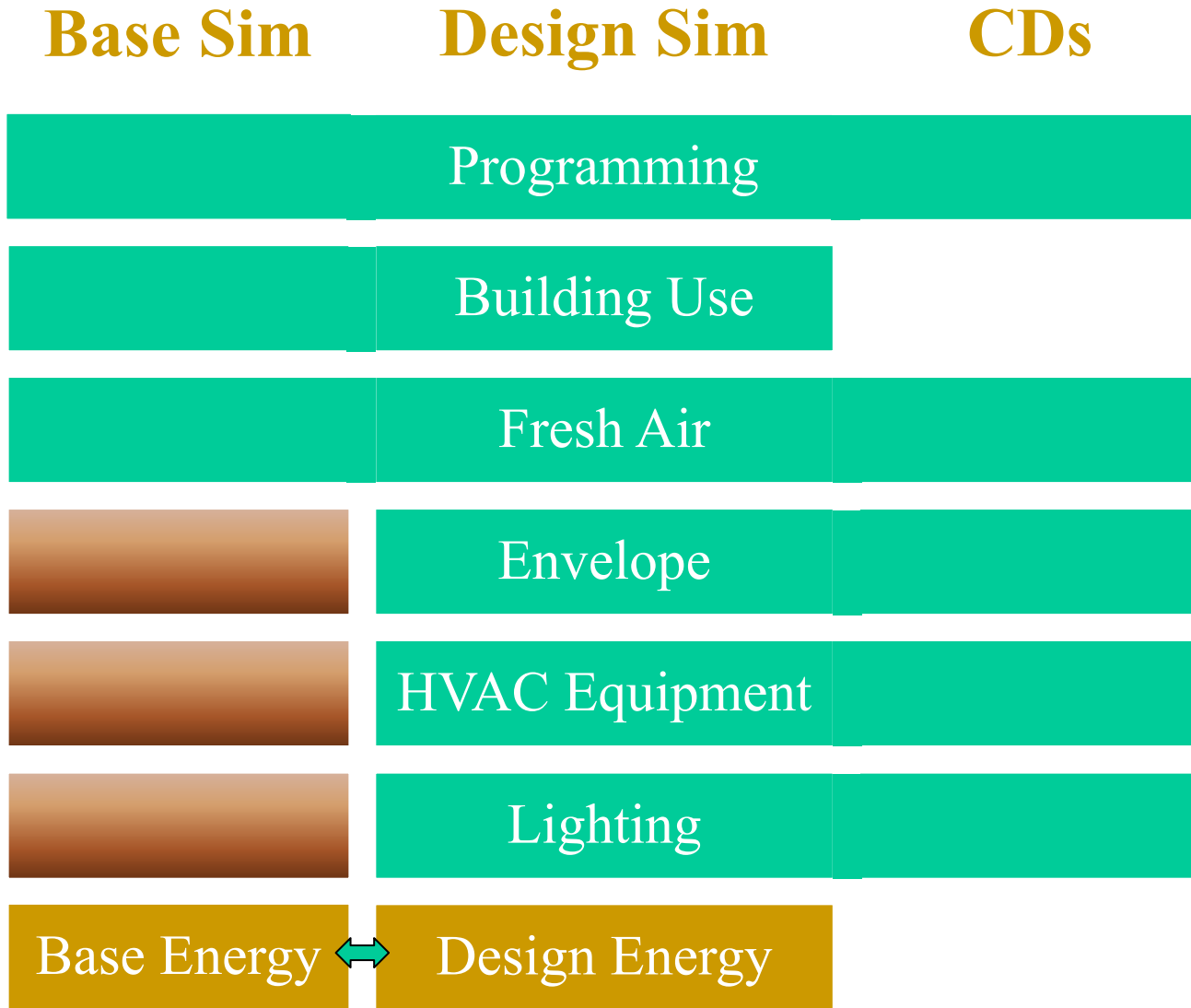
Russ Landry, PE

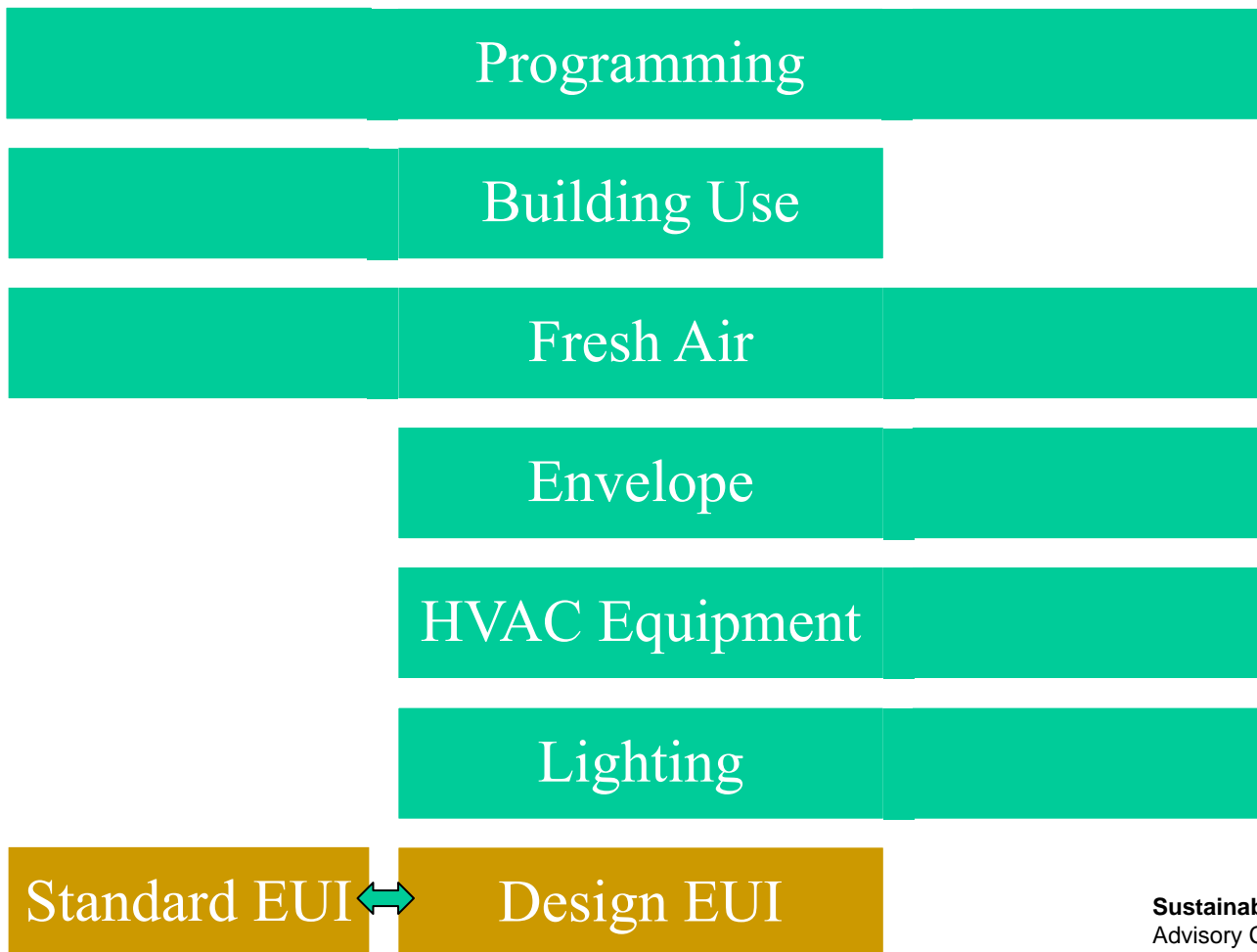
SB2030 in Comparison Other Green Building Rating Systems: Design Process Steps



SB 2030 ENERGY STANDARD

Most Green Building Rating Systems: Energy Design



Tool**Design Sim****CDs**

Key Documents for Energy Leader

- Building Energy Performance Guide (BEPG)
 - In Guidelines Tracking Tool (E1D)
- Small Building Standard
 - Front Page of SB2030 Website
 - www.mn2030.umn.edu

Early Design Stage Submittals/Review

Tool	Design Sim	CDs
	Programming	<i>MSBG</i>
	Building Use	
	Fresh Air	
	Envelope	<i>Checklist</i>
	HVAC Equipment	<i>Checklist</i>
	Lighting	<i>Checklist</i>
Standard EUI	↔	Design EUI

Tool

Design Sim

CDs

Common SD/DD Phase Pitfalls for Project Teams to Watch Out for...

...on following slides

Envelope

Checklist

HVAC Equipment

Checklist

Lighting

Checklist

Standard EUI

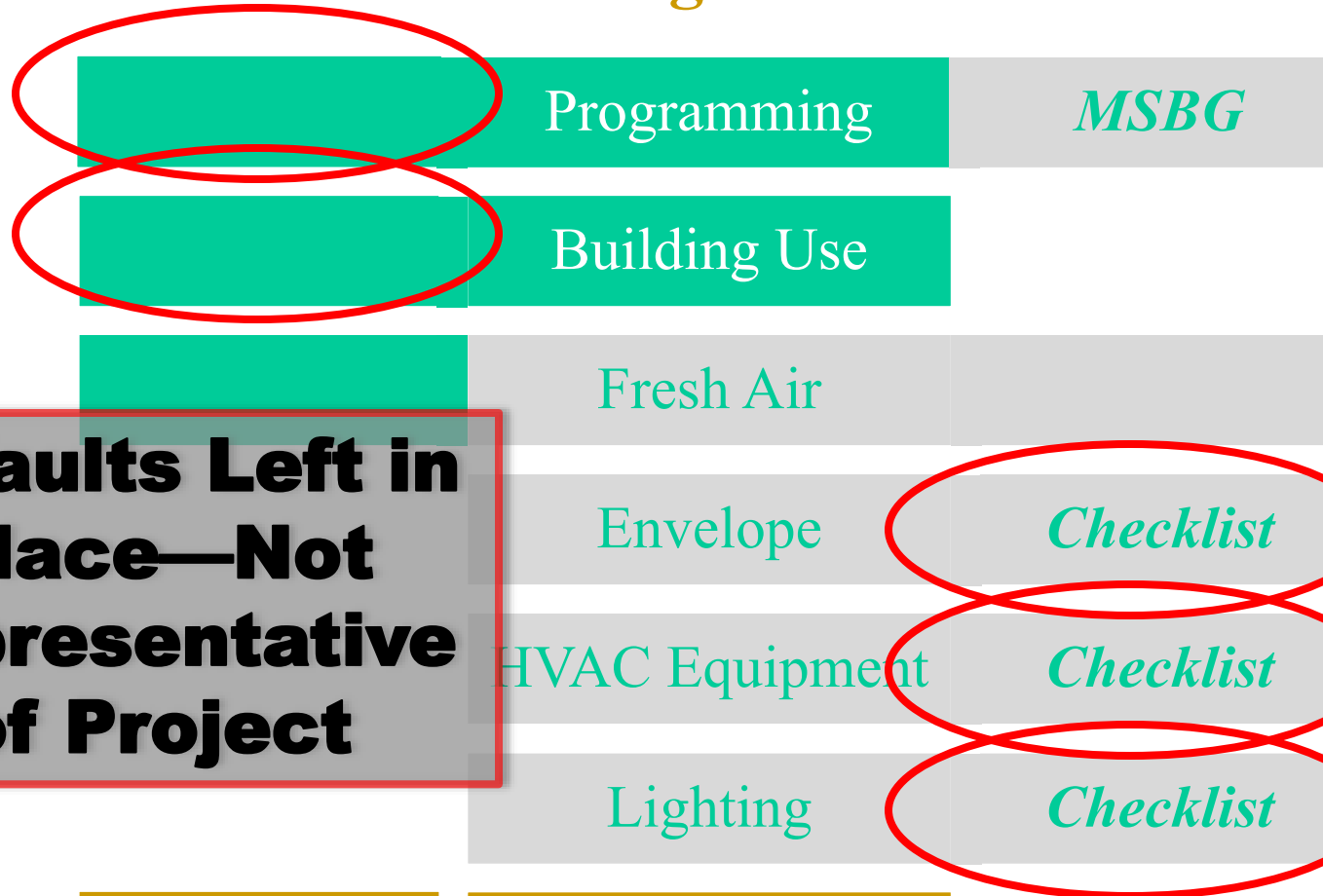


Design EUI

Tool

Design Sim

CDs



Defaults Left in Place—Not Representative of Project

Standard EUI



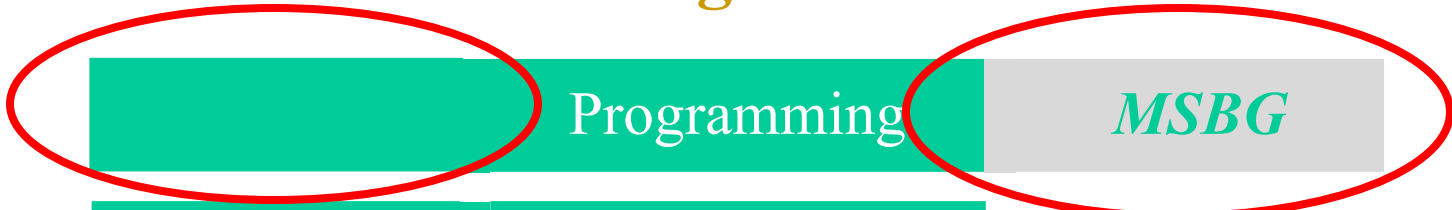
Design EUI



Tool

Design Sim

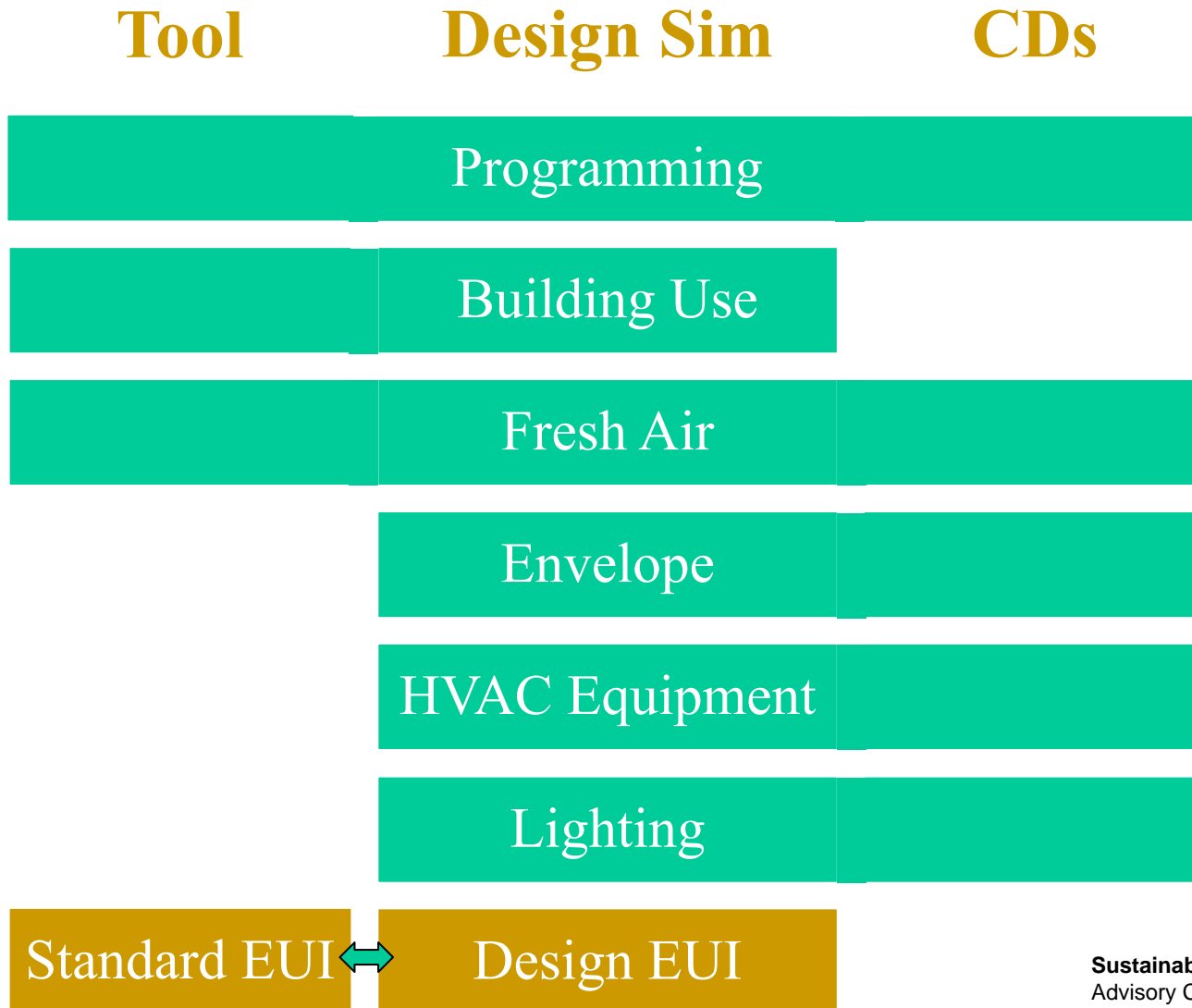
CDs



**Mismatches with Guidelines
Tracking Tool**



**--District Systems
--Optimistically Low**

**CD Phase
Submittals/Review**

Tool

Design Sim

CDs

Common CD Phase Pitfalls for Project Teams to Watch Out for...

...on following slides

Envelope

HVAC Equipment

Lighting

Standard EUI



Design EUI

Tool

Design Sim

CDs

Programming

--Total SF

Building Use

--Schedules
(--Equipment)

Fresh Air

**Defaults—Mismatch
w/ Energy
Standards Tool**

Envelope

HVAC Equipment

Lighting

Standard EUI



Design EUI



Tool

Design Sim

CDs

Programming

**--Total SF
--Space Types**

Building Use

Fresh Air

Envelope

HVAC Equipment

**--Zoning
--Fans/Pumps**

Lighting

--Space LPDs

**Mismatches w/
Construction
Documents**

Standard EUI



Design EUI



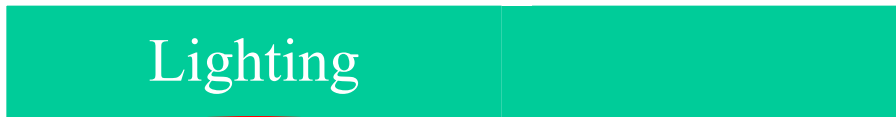
Tool

Design Sim

CDs



**Inconsistencies
w/ Guidelines
Tracking Tool**



**--Updates
--District Systems**



SB 2030 ENERGY STANDARD

CD Phase Submittals/Review

Tool

Design Sim

CDs

--Specs

Inadequate Documentation Submitted

**--Windows
--Insulation**

--Fan Power

Standard EUI



Design EUI



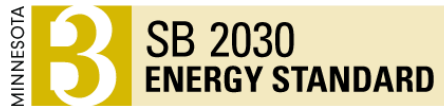
Submittals/Review for Small Building Standard

Tool	Design Sim	CDs
	Programming	
	Building Use	
	Fresh Air	
	Envelope	
	HVAC Equipment	
	Lighting	
Standard EUI	Design EUI	

Hallmarks of Best Success

Fewest Surprises

- Keep Up in Early Phases



- Include Key Items in Early EST & Simulations
 - Critical Items Can Vary by Project
 - Space Types & Building Use (Schedules & Equipment)
 - District Systems
 - Consistency Between EST & Simulations & Intent
- Talk with CSBR/CEE about Issues Early

