



Efficiency Works

Platte River
Power Authority

Estes Park
Light and Power

Fort Collins
Utilities

Longmont
Power &
Communications

Loveland
Water and Power

Integrated Design Assistance Program

September 25, 2014

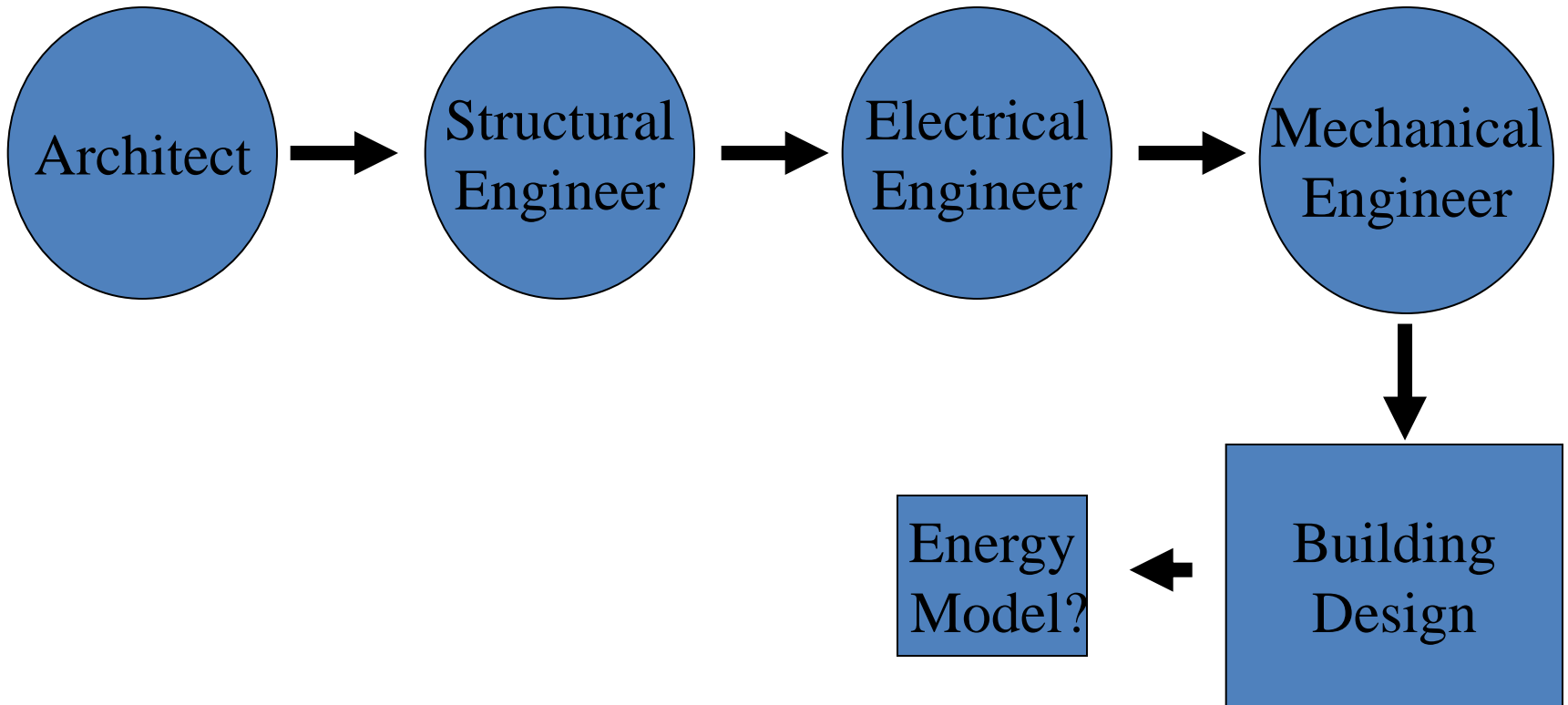


Desired Program Elements

- Program application early in process
- Thinking about energy early, setting goals
- Integrated design process
- Modeling
 - Predict building performance
 - Early enough to inform the design
- Post occupancy follow-through



Traditional Design Process



Integrated Process

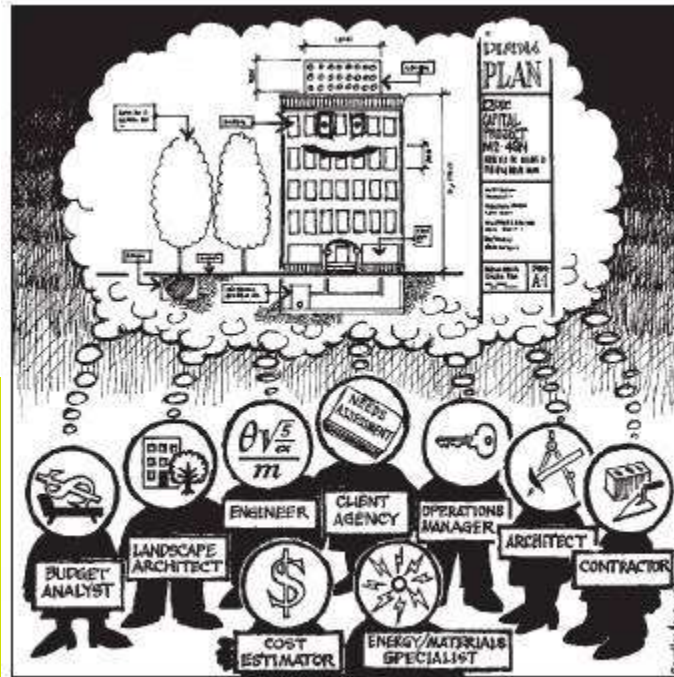
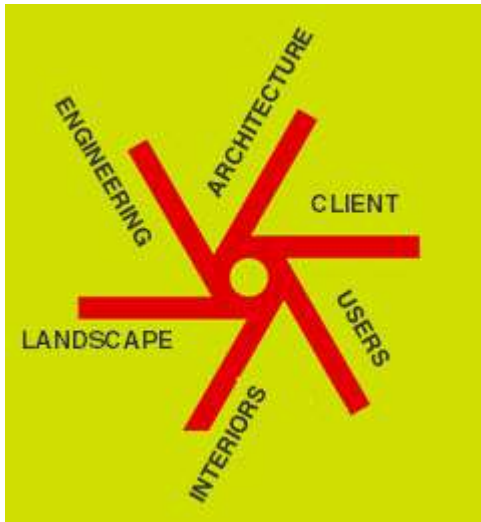
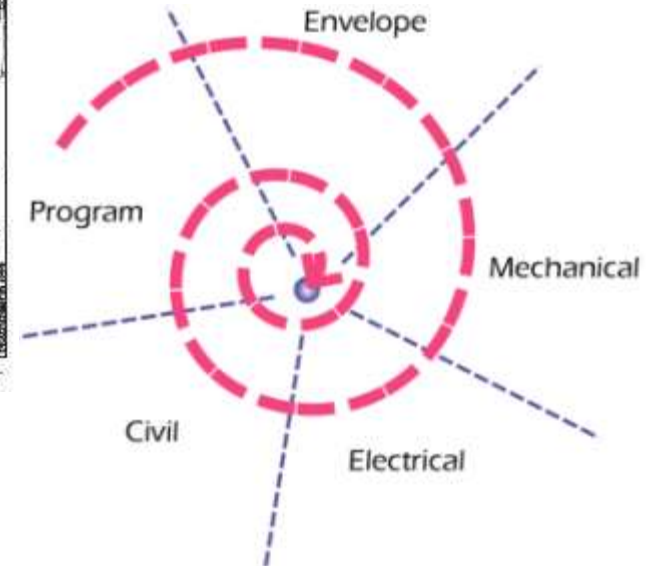
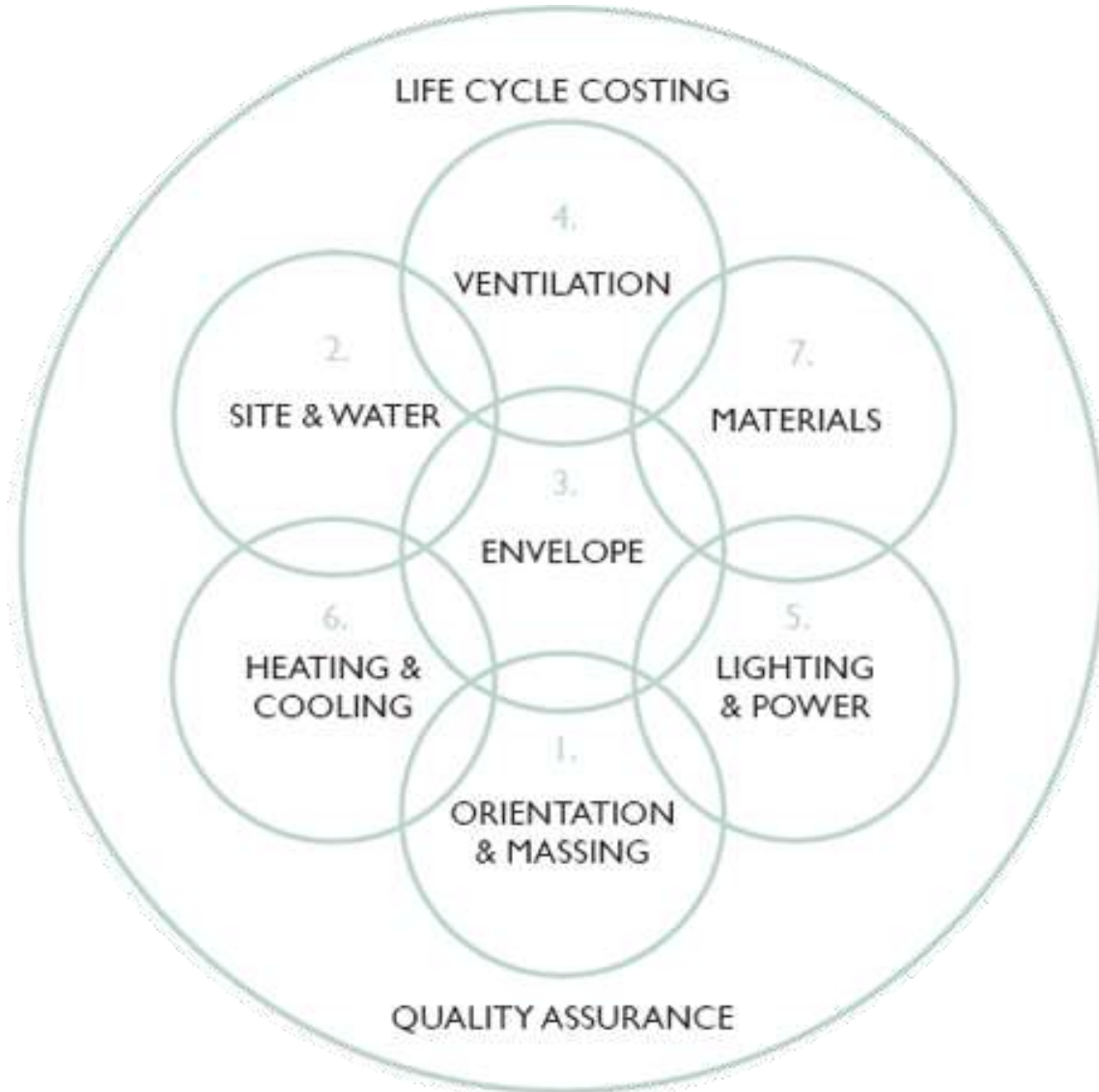


Illustration: Bruce Hender



Integrated Systems



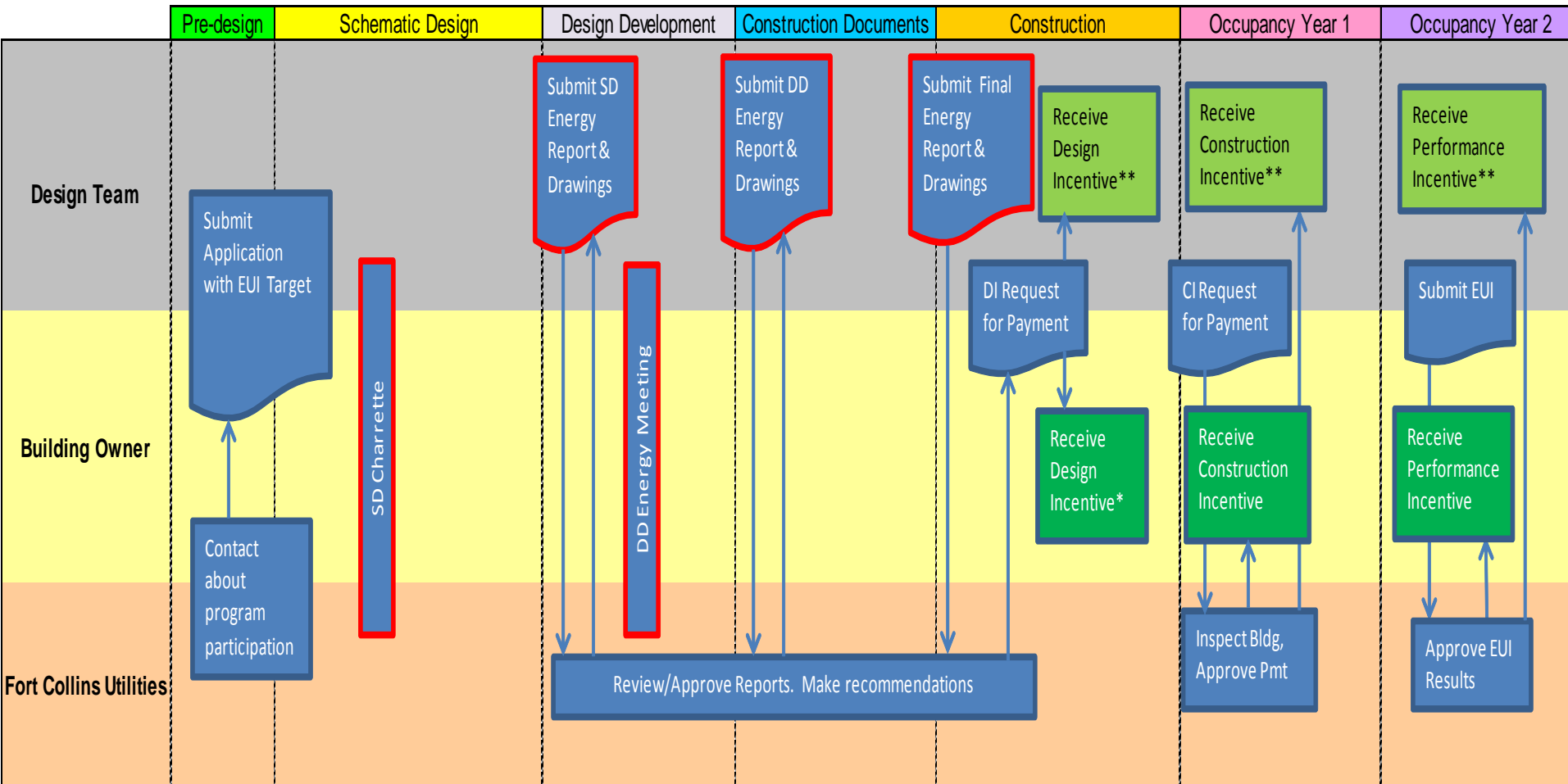
IDAP Highlights

- Target Energy Use Intensity (EUI) - kBtu/SF/yr
 - Architecture 2030 Challenge[®]
 - Energy Star Target Finder
- Design, Construction and Performance incentives for Owner and Design Team
- Performance Incentive based on **actual** performance
- Other features
 - Approved energy consultants
 - Charrette, energy meeting
 - IDAP report deliverables/templates
 - Overall guidance and quality control
 - Align deliverables with architectural milestones



2030 Challenge [®]	
60%	→ 2014
70%	→ 2015
80%	→ 2020
90%	→ 2025
Carbon Neutral 2030	

IDAP Overview

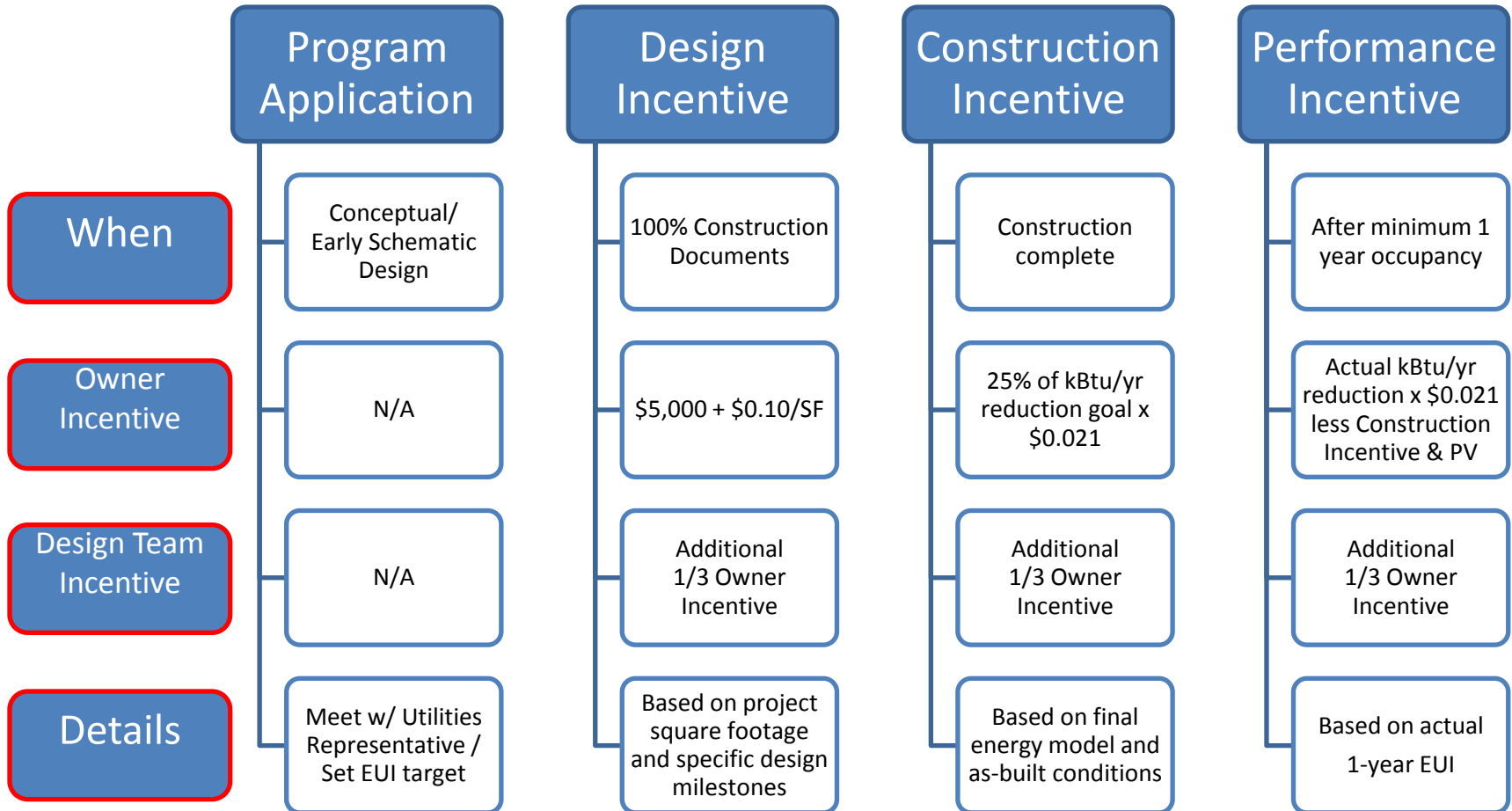


*Items with red borders each count toward 20% of the design incentive. Owner/Design Teams completing all 5 items receive 100% of the design incentive. Design Incentive for DT is 1/3 of Owner Incentive.

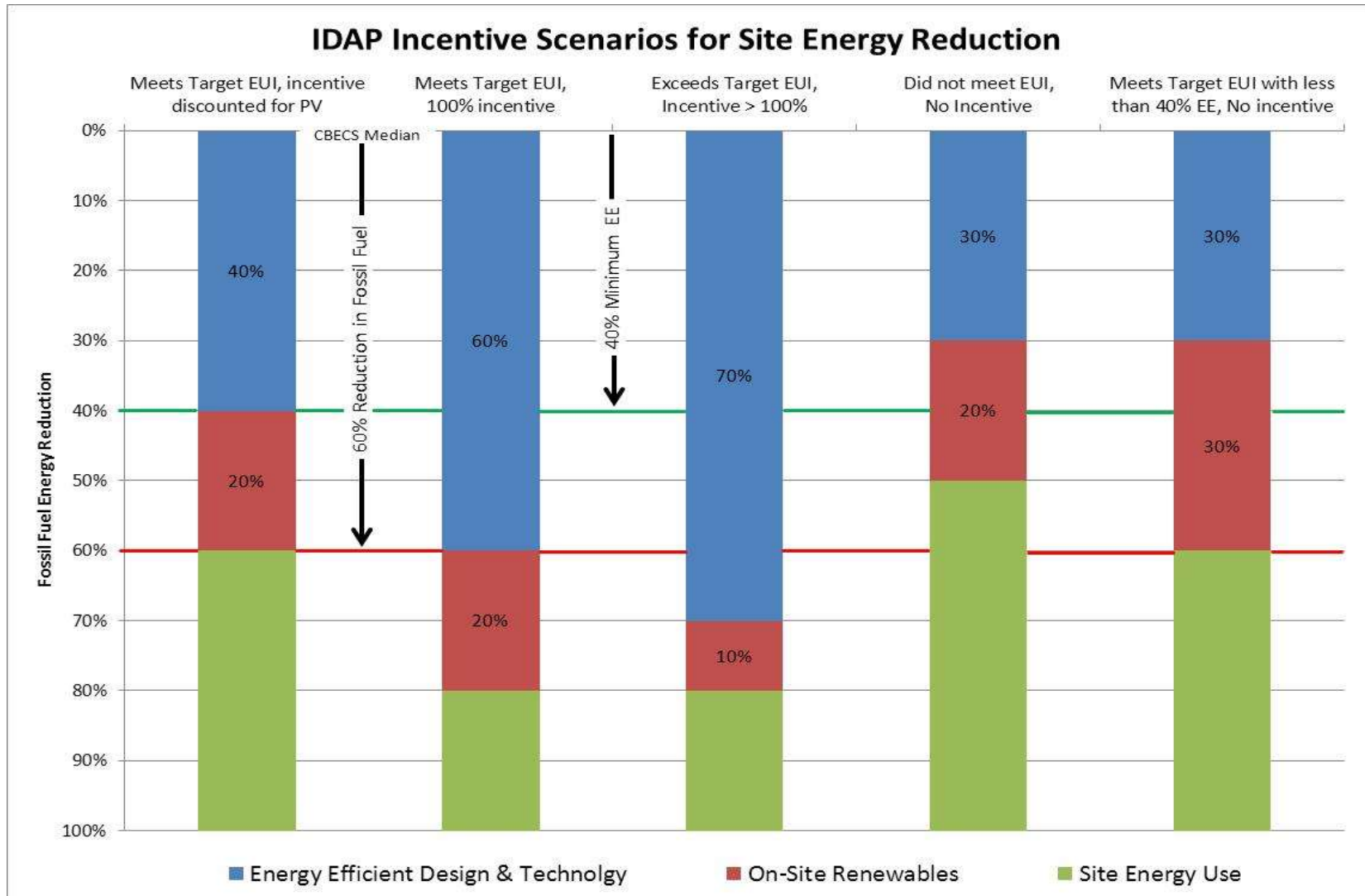
**Design Team (DT) Performance Incentives are 1/3 of Owner Performance Incentives.



Incentive Structure



Incentive Scenarios



Incentive Example Summary

Total potential incentive for a 20,000 SF office building that exceeds median EUI by 63.2%

Incentive Type	Owner	Design Team
Design	\$7,000	\$2,333
Post Construction	\$5,555	\$1,852
Performance	\$14,840	\$4,946
Total	\$27,395	\$9,131



Design Incentive

Required Elements

- 1) Hold a Schematic Design Charrette,
- 2) Schematic Design Energy Report (Utilities format) and drawings,
- 3) Participate in a Design Development energy meeting,
- 4) Submit a Design Development Energy Report (Utilities format) and drawings, and
- 5) Submit a Final Energy Report (Utilities format) at the end of design and Construction Documents.

If CDs match FER then the design incentive is paid.



Construction Incentive

Final Inspection

- Deficiencies identified and not resolved during Cx need to be factored into energy model and predicted EUI if they cannot be rectified
- If the Target EUI can be met at this point, then the Construction Incentive will be paid



Performance Incentive

Performance Period

- Based on consecutive 12 months of actual utility data
- 2 year period allows for optimizing building performance
- IDAP Team available to assist during this phase
- Performance Incentive paid if Target EUI is met or exceeded



Modeling Scope

- “Baseline” is the Median EUI from Energy Star[®] or other sources, as applicable (i.e., no model)
- There’s only one predictive model of the proposed building (i.e., no comparative modeling in IDAP)



IDAP Whole Building Strategy

- Coordinating across design team disciplines:
 - Building shape and orientation
 - Building envelope, thermal design and efficiency
 - Daylighting and electric lighting design and controls
 - HVAC mechanical systems & duct/pipe design
 - Use of properties of water and air to minimize energy use
 - Fenestration optimization
 - Enhanced control automation
 - On-site, integrated renewable systems
- Other factors to consider:
 - Occupancy & space utilization
 - Schedules
 - Internal gains and service loads (anticipated plug loads, people, building equipment)



Getting Started

- Program design documentation can be found on the Utilities website www.fcgov.com/idap
 - Program Application
 - Consultant Application
 - Consultant Manual
 - Participant Manual
 - Approved Energy Consultants
 - Report Templates
- Gary Schroeder – IDAP Manager
 - Fort Collins Utilities
 - 970.221.6395 and gschroeder@fcgov.com
- Jim Zarske – Program Administrator
 - Nexant, Inc.
 - 303.402.2497 and jzarske@nexant.com



Thank you!

