Integrated Design Narrative

National Park Service (NPS) - Denver Service Center (DSC) | 5-22-23

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| Lead Design Firm: |  |
| Landscape Architecture Design Firm: |  |
| Civil Design Firm: |  |
| Structural Design Firm: |  |
| Architectural Design Firm: |  |
| Mechanical Design Firm: |  |
| Electrical Design Firm: |  |
| Commissioning Authority: |  |
| Construction Manager: |  |
| Other Design Firms: |  |

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**Opportunities for Integration:**

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*EXAMPLE*

* *Building orientation:*
* *Building siting:*
* *Local manufacturer of Polyisocyanurate stress skin panels can qualify for local materials.*
* *Integrate roof with PV (photovoltaic) requirements by using standing seam and integral panels.*
* *Deciduous trees planting on south side to improve energy performance of building.*

**Tradeoffs Discussed and Made:**

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*EXAMPLE*

* *Building was oriented with its long access east-west. This required a longer driveway and some regrading on the east side but will result in better energy performance and more comfortable workspaces.*
* *Building site was moved 20 yards to the west to permit better daylighting opportunities out of the shadow of the neighboring hill. This also allows the construction of a bioswale on the east side.*
* *Roof design load will be adjusted to accommodate a thermosiphon type solar water heater.*
* *Continuous insulation will be placed around the outside of the stud walls rather than just insulating between studs.*
* *Light colored roof will be explored in concert with lowering the roof pitch.*
* *Aspect ratio of building will be modified to ensure all occupied spaces have access to outside views.*

**Energy Analysis Results**

Submit energy analyses (using software which incorporates DOE-2 load estimation code) for at least three prospective options of the constructed project which may include:

* Building aspect ratio
* Building siting
* Building orientation, and/or
* Mechanical systems

**Base Case Annual Energy and Water Utilization**

Establish a code compliant base case mathematical model for the project. Provide enough information in the model to estimate annual energy and water usage. This will be used for comparison to show compliance with standards requiring improvement over a base design.