



Sustainable Building Program

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” -World Commission

www.coconino.az.gov/sustainablebuilding

Sustainable Building Program Guidelines and Rating Worksheet 2016

Submittal Date: _____ Final Date: _____

Point Rating: _____ Point Rating: _____

Owner:		Phone:	
Project Name:		Project #	
Site Address:		Parcel #	
City, St.:		BD#	
Builder:		Phone:	
Architect/Designer:		Phone:	

<u>Bronze Level</u>	<u>Silver Level</u>	<u>Gold Level</u>	<u>Platinum Level</u>
By qualifying at the Bronze level you will be meeting the CCSBP's baseline for sustainably responsible building.	The Silver level is designed to achieve a higher level of environmental building performance.	At the Gold level, the building demonstrates exceptional environmental commitment.	At the Platinum level, the building demonstrates above and beyond exceptional environmental commitment.
Accumulate a total of <u>200 points</u> From the rating worksheet	Accumulate a total of <u>275 points</u> From the rating worksheet.	Accumulate a total of <u>375 points</u> From the rating worksheet.	Accumulate a total of <u>425 points</u> From the rating worksheet.

<u>Summary of Rating Categories</u>	
1 Community and Site	4 Materials and Resource Use
2 Water Efficiency and Use	5 Indoor Environmental Quality
3 Energy Efficiency and Use	6 Aesthetics, Innovation and Education

Fundamental Elements for the Coconino County Sustainable Building Program <i>(These elements are strongly encouraged for new home construction)</i>		Project Adherence
1	Project meets the requirements of International Energy Conservation Code as currently adopted by governing jurisdiction.	
2	If there is a forced air heating/cooling system, it must have a programmable/set-back thermostat.	
3	Hot water lines are insulated to min R-3.6 under slab or in crawl spaces, not in conditioned space walls. (E.g. 1/2" foam insulation over 1/2" - 3/4" pipe.)	
4	Home manual and owner education provided.	
5	Home owner agrees to provide Coconino County with copies of all utility bills for a period of two years to assess the performance of the home. (If home is builder-built for purpose of resale, this item can be negotiated.)	
6	All tropical woods used anywhere in the project are FSC certified.	
7	Carbon monoxide (CO) detectors installed per manufacturer's recommendations. At minimum, there is one per floor.	

Worksheet Items for Credit

Potential
Points

Project
Points

1-Community and Site

Community	1.01	<p>Community Connectivity:</p> <ul style="list-style-type: none"> • Project is located within city limits. 15 pts ____ • Project is located within 0-2 miles of an urban trail. 3-5 pts ____ • Project is located within 0-2 miles of public transportation. 3-5 pts ____ • Project is located within 0-1 mile of open space, forest trails, and/or active recreation areas including parks, community meeting/gathering places. 5-10 pts ____ • Project is located within 0-2 miles of basic shopping services. 5-15 pts ____ 	50	
Site	1.02	Project is located within a density of more than 7 dwellings per acre development area.	3	
	1.03	Building is placed on <u>previously developed</u> land or urban infill.	4	
	1.04	<p>Site Impact: Site is developed with Low-Impact Development (LID) strategies and/or green infrastructure such as:</p> <ul style="list-style-type: none"> • Building sited to preserve open space and reduce impact on site vegetation, topography and natural drainage. 1-2 pts ____ ----- • Construction minimizes impact through designated “no-disturbance zone” marked on drawings and flagged during construction. 1 pt ____ ----- • Hard surfaces constructed with permeable materials or drain to permeable surfaces. 1-2 pts ____ ----- • Storm water retained on site using wattles during construction and swales, berms or infiltration basins after construction. 1-2 pts ____ ----- • Spread of invasive weeds is reduced through use of ground cloth, spraying vehicles clean and reduced disturbance area. 1 pt ____ ----- • Erosion control through the application of mulch. 1 pt ____ ----- • Trees are protected during construction (use of barricades, boundaries, and no-disturbance zone around trees and their roots). 1 pt ____ 	10	

Site	1.05	Summer shade, natural cooling, and wind protection landscaping used.	1	
	1.06	Plan or proof of food producing garden is provided.	2	
	1.07	FireWise Site: <ul style="list-style-type: none"> • Conifer spacing 30' between crowns. 1 pt ____ • Tree branches pruned 6-10' above ground. 1 pt ____ • "Fire-free" area- no fuels- within 5' of home. 1-2 pts ____ • Wildfire protection plan implemented, or hydrant. 1 pt ____ • Building envelope is made with fire resistant material 5 pts ____ 	10	
	1.08	Only non-toxic pesticides (includes termite pretreatment) and herbicides are used on site. Or none used.	2	
	1.09	<u>Outdoor living space</u> is included (patios, porches, etc) and has an area equal to at least 25% of the total indoor livable area.	5	
	1.10	Dark Sky Lighting: (Points based on % of total fixtures installed) <ul style="list-style-type: none"> • Exterior lights are fully shielded. 1-3 pts ____ • Bulbs are low pressure sodium or amber LED light. 1-2 pts ____ 	5	
Local Economy	1.11	Project <u>incorporates support for the local economy</u> by hiring local contractors, buying materials from locally owned and operated stores, employing local building professionals, etc.	10	
Total for category 1-Community & Site			102	

2-Water Use and Efficiency				
Plumbing	2.01	Plumbing drainage capability to eliminate the need to keep house heated in winter during periods of vacancy.	2	
	2.02	Greywater: <ul style="list-style-type: none"> • Two pipe drain system for future gray water recovery system is installed. 10 pts ____ • Complete gray water irrigation system is installed. 20-25 pts ____ • Reclaimed water is used in landscaping. 20-25 pts ____ 	25	
	2.03	Rainwater Collection for Domestic Use: <ul style="list-style-type: none"> • Filtration and use for toilet flushing 20 pts ____ • Treatment for domestic water use in whole house 30 pts ____ 	30	
	2.04	Point of entry water or point of use water purification system meets ANSI/NSF standards (does not include reverse osmosis systems).	2	

Fixtures	2.05	<p>Water Fixtures: gpm = gallons per minute (Points based on % of total fixtures installed)</p> <ul style="list-style-type: none"> Bathroom Faucets are low flow: 1.5 gpm (WaterSense rated)= 1 pt ___ 1.2 gpm= 3 pts___ <1.2 gpm= 5 pts ___ <hr/> <ul style="list-style-type: none"> Kitchen faucets are low flow: 1.5 gpm (WaterSense rated)= 3 pts ___ <1.5 gpm = 5 pts ___ <hr/> <ul style="list-style-type: none"> Showerheads are low flow: 2.0 gpm (WaterSense rated)= 10 pts ___ 1.5 gpm= 15 pts ___ <hr/> <ul style="list-style-type: none"> Toilets are: 1.28 gallons per flush (WaterSense rated)= 10 pts ___ < 1.28 gal per flush= 15 pts ___ Composting toilets= 20 pts ___ 	45	
Appliances	2.06	<p>Water Appliances:</p> <ul style="list-style-type: none"> Washing machine is Energy Star rated. 20 pts ___ Dishwasher is Energy Star rated. 5 pts ___ 	25	
Site	2.07	<p>Rainwater Collection for Irrigation:</p> <ul style="list-style-type: none"> Passive system to direct water to plants (swales, berms) 1-5 pts ___ Rain gutters 5-10 pts ___ Cistern or storage tank 5-10 pts ___ Distribution piping from storage to direct water to plants 5-10 pts ___ 	35	
	2.08	<p>Landscaping:</p> <ul style="list-style-type: none"> Xeriscaped (based on % of landscaped areas) excluding vegetable/fruit gardens 20 pts ___ No irrigation system installed (beyond stored rainwater or greywater) 10 pts ___ Turf minimized: <200 sf= 5 pts ___ <400 sf = 3 pts ___ Include invasive weed management brochure in owner's manual 2 pts ___ Rainwater sensor shut-off 2 pts ___ Non-spray, zone irrigation 2 pts ___ 	41	
Total for category 2-Water Use & Efficiency			205	

3-Energy Use and Efficiency				
Building Info Modeling	3.01	Building Information Modeling completed (i.e. - REM Design, Energy 10, Energy Scheming, Energy Plus, HERS, ResCheck, CommCheck, etc.).	4	
Renewable	3.02	<p>Clean renewable energy system installed (solar electric (photovoltaic) power and/or wind power): Points are awarded based on percentage of the project's energy needs met</p> <ul style="list-style-type: none"> 5 points for every 10% of energy needs met; a max. of 50 points is awarded for 100%. ___ Solar-ready 5 pts: ___ 	50	

Passive Solar Design	3.03	<p>Passive Solar Design:</p> <ul style="list-style-type: none"> • Home oriented on the lot so the longest axial dimension faces within 20° of True South. 2-5 pts ____ <hr/> <ul style="list-style-type: none"> • Windows on south side of building. 3 pts ____ <hr/> <ul style="list-style-type: none"> • South glass has proper overhang or other shading feature to afford both summer shading and winter sun. 1-2 pts ____ <hr/> <ul style="list-style-type: none"> • For South glass, the highest Solar Heat Gain Coefficient is used when paired with the lowest U-value. If cooling is a significant concern, the SHGC will not exceed 0.55. 1 pt ____ <hr/> <ul style="list-style-type: none"> • Thermal Mass is included in the design (trombe wall, concrete floor, etc.). 1-4 pts ____ <hr/> <ul style="list-style-type: none"> • Exterior shading devices, screens, or landscaping for windows on the East/West side of the building, or no East/West windows are installed. 1 pt ____ <hr/> <ul style="list-style-type: none"> • Minimal use of windows on the north side of the building. 1-2 pts ____ <hr/> <ul style="list-style-type: none"> • Home is designed for passive solar winter heating using modeling or solar heat gain analysis to meet: 80%= 4 pts 60%= 3 pts 40%= 2 pts 20%= 1 pt of annual need. ____ <hr/> <ul style="list-style-type: none"> • Place rooms with low heating, lighting, and use requirements, such as utility rooms, storage rooms and garages, on the north side of the building. 1 pt ____ 	23	
Passive Efficiency	3.04	<p>Hot Water Lines:</p> <ul style="list-style-type: none"> • Water heater is within 20-pipe feet length of fixtures. 2 pts ____ • Fully insulated to min. R-3.6 throughout entire house, including conditioned spaces (including trunk lines, branch lines, joints, elbows, and lines installed under slab) 3 pts ____ 	5	
Passive Efficiency/ Performance	3.05	<p>Water Heating:</p> <ul style="list-style-type: none"> • Tanked Water Heater: <ul style="list-style-type: none"> -EF of 0.7 or higher for gas or 2.0 or higher for electric. 8 pts ____ -Electric or gas heat pump water heater installed in lieu of conventional electrical water heater. 12 pts ____ -Recirculation system with a timer and shut off switch is installed or point of use recirculation system. 3 pts ____ • Tank-less (instantaneous) Water Heater installed with an Energy Factor (≥ 0.90 for Electric, ≥ .80 for Gas) 12 pts ____ • Solar water heating system SRCC certified and sized to meet: <ul style="list-style-type: none"> 50% of annual hot water needs: 12 pts 80% of annual hot water needs: 15 pts ____ 	15	

Structural-Thermal Elements	3.06	<p>Building Envelope:</p> <ul style="list-style-type: none"> • Foundation is insulated on the interior or exterior. R-10 for 2' =3 pts >R-10 for 2'=5 pts ____ <hr/> <ul style="list-style-type: none"> - • Wall Assemblies: (14 points max) <ul style="list-style-type: none"> R-24=2 pts ____ R-26=2 pts ____ R-30=4 pts ____ R-40=6 pts ____ <R-40=8 pts ____ -Have thermal break. 4 pts ____ -Integral structure system used to combine structural and thermal properties. 2 pts ____ <hr/> <ul style="list-style-type: none"> - • Ceiling Assembly: (16 points max) <ul style="list-style-type: none"> -R-49=5 pts R-60= 10 pts ____ -Has thermal break. 4 pts ____ -Integral structure system used to combine structural and thermal properties. 2 pts ____ <hr/> <ul style="list-style-type: none"> - • Windows: (8 points max) <ul style="list-style-type: none"> -Strategically placed and minimally sized 4 pts ____ -U-value of .32 or lower 2 pts ____ -Have proof of low-E coating on the 2nd and 4th surface of the double pane. 1 pt ____ -Window coverings for additional insulation. (shades, quilts, insulating drapes) 1 pt ____ <hr/> <ul style="list-style-type: none"> - • Doors: (4 points max) <ul style="list-style-type: none"> -All exterior opaque doors are insulated to: R-5=1 pt ____ R10= 2 pts ____ -Garage door(s) is insulated to R-10 for attached and/ or conditioned garages. 2 pts ____ <hr/> <ul style="list-style-type: none"> - • Air Sealing (10 points max) <ul style="list-style-type: none"> -Thermal envelope and penetrations are completely air sealed. 4 pts ____ -Attic is conditioned space, or access is sealed and insulated. 2 pts ____ -Diagnostic Blower Door test results show 3 ACH50 or less (Min. 2012 IECC level). 2 pts ____ -Vestibule is used to minimize heat loss at main entrance(s). 1 pt __ Gasketed doors 2 pts ____ 	57	
	3.07	<p>Heating:</p> <p>Furnace Efficiency:</p> <ul style="list-style-type: none"> • 90%=12 pts 92%=14 pts 95%= 15 pts 96%=16 pts 97%= 18 pts ____ • Duct blaster test is performed and results show that total duct leakage ≤ 6 cfm/sf to outdoors per 100 sq ft of conditioned floor area. 2 pts ____ <p>Boiler Efficiency:</p> <p>90%=14 pts 92%=16 pts 95%=18 pts 97%=20 pts ____</p>	20	

Energy Appliances	3.08	Cooling: <ul style="list-style-type: none"> • Stack and/or cross ventilation capacity exists for seasonal cooling. (Paths < 40 ft.) 1 pt ____ • An open floor plan will allow air to circulate freely throughout the house. 1 pt ____ • No AC is installed. 3 pts ____ • Central AC unit with a SEER rating of 15 or better or AC unit installed as a single unit with an EER (Energy Efficiency Rating) of 40+ 1 pt ____ 	6	
	3.09	Multi-speed ceiling fans (Energy Star Certified) are installed in 50% of rooms.	2	
	3.10	No HVAC air handling equipment is in non-conditioned spaces.	1	
	3.11	Smart home system installed for heating and lighting control and telecommunications. <ul style="list-style-type: none"> • Remote control of heat only: 1 pt ____ • Remote control of lights, heat, etc.: 2 pts ____ 	2	
	3.12	Clothes Drying: <ul style="list-style-type: none"> • No dryer is installed & clothes line or rack is installed. 10 pts ____ • Energy Star dryer is installed. 4 pts ____ • Condensing Heat Pump dryer installed. 6 pts ____ • Gas dryer stub-out is installed. 1 pt ____ • Clothes line or rack installed. Inside: 2 pts ____ Outside: 1 pt ____ 	10	
Lighting	3.13	Lighting: <ul style="list-style-type: none"> • Daylighting provided in all rooms (includes solar tubes but not skylights) 3 pts ____ • Interior light fixtures are non-incandescent: (Points based on % of total fixtures installed) Compact or tubular fluorescent: 6 pts Energy Star certified : 8 pts LED: 10 pts ____ 	13	
Power	3.14	Utility supplied electric power (or solar generation) is on site and used at start of framing.	5	
Other Programs	3.15	Project is also participating in another energy certification program (i.e. LEED, NAHB, Engineered for Life, Certified Plus, Build America, Utility Company Programs, Energy Star, etc.)	1	
Total for category 3-Energy Use & Efficiency			214	
4- Material and Resource Use				
House Size	4.01	Credit awarded for <u>smaller houses</u> (all buildings in project). The square footage per bedroom is: <300 sf = 50 pts , <400 sf = 44 pts , <500 sf= 40 pts , <600 sf= 30 pts , <700 sf = 20 pts , <800 sf = 10 pts	50	

Value Engineering	4.02	Use of Optimal Value Engineering (OVE), LEAN Engineering, or advanced framing techniques. Must include examples on drawings.	5	
Durable Adaptive Design	4.03	Credit will be awarded for <u>designs with extra consideration for durability and resilience</u> to weather damage from these elements: freeze-thaw cycles, wind, flooding, storm water, moisture, temperature extremes, and UV radiation exposure.	10	
	4.04	Home is <u>designed to be adaptive</u> in use. Examples include accessibility to additions to accommodate aging in place, ADA accessible, residential to commercial, home based industry, extended family, smart wiring, ease of remodeling, etc.	10	
	4.05	Use of durable finishes (i.e. warranty or life expectancy of 40+ years). Points are based on % of total finish used in each category: roofing (3 pts), siding (3 pts), and indoor flooring (3 pts).	9	
Building Materials	4.06	Regional materials: Points are based on % of total material used. *Extracted within 500 miles of site. List materials and percentage of total materials. 10 pts max *Manufactured within 500 miles of site. List materials and percentage of total materials. 5 pts max	15	
	4.07	Materials used are FSC or SFI certified. Locally milled wood can also receive this credit. Points are based on % of total material used. List materials and percentage of total materials. 10 pts max	10	
	4.08	Recycled, salvaged, and/or rapidly renewable materials are used. Points are based on % of total material used. List materials and percentage of total materials. 15 pts max	15	
Solid Waste	4.09	Construction Waste Management: <ul style="list-style-type: none"> • Waste management area located in area that reduces impact. 1 pt ____ • Site has clear waste segregation strategy and area. 3 pt ____ • There is waste management plan. Verbal: 1 pt Written: 4 pts ____ • Construction waste is reduced through reuse, recycling and donation of excess materials. 6 pts ____ • Removed stumps and tree limbs are ground for mulch for use on site. 1 pt ____ 	15	
Total for category 4-Materials & Resource Use			139	

5- Indoor Environmental Quality				
Site	5.01	Only <u>non-toxic pesticides</u> (includes termite pretreatment) <u>and herbicides</u> are used on site. Or none used.	2	
Ventilation	5.02	Ventilation Addresses ASHRAE Standard 62.2: <ul style="list-style-type: none"> • Heat/Energy Recovery Ventilator (HRV or ERV) or air-to-air heat exchanger is installed. 20 pts ____ • Furnace with fresh air intake. 10 pts ____ • All bathroom exhaust fans are wired with light, occupant sensor, or on a timer. 5 pts ____ • Kitchen exhaust fans rated for 1.0 sone (noise rating) or less. 2 pts ____ • All exhaust fans lead outdoors. 2 pts ____ 	20	
	5.03	Passive radon ventilation system is installed per EPA guidelines.	10	
	5.04	Project has detached garage, no garage, or an exhaust fan in garage on a timer and/or wired to door opener on attached garage.	2	
Building Materials	5.05	Finish Material VOC level (flooring, adhesives, sealants, paints, etc.) Points based on percentage of finished area: <ul style="list-style-type: none"> • Zero VOC materials are used 10 pts ____ • Low VOC materials are used 5 pts ____ 	10	
	5.09	Formaldehyde-free materials are used: insulation, sheeting, sub-floors, cabinets, etc.	5	
Other Programs	5.10	EPA's Indoor airPlus certified.	5	
Heating & Cooling	5.06	100% of combustion appliances including fireplaces & woodstoves are sealed-combustion. 5 pts ____ No fireplaces or woodstoves. 2 pts: ____	5	
Total for category 5-Indoor Environmental Quality			59	

6- Aesthetics, Innovation & Education				
Aesthetics	6.01	Intentional aesthetic enhancement credit: Points are awarded based on 1.Composition and expression 2. Craftsmanship and 3.Response and association with place and context.	15	

Education	6.02	Educational aspects are integrated throughout the construction (eg construction blog, tours, speaking at local schools about project)	5	
Innovation	6.03	Innovation:	10	
Education	6.04	Owner agrees to open house for a County Sponsored Home Tour within 2 years of the certificate of occupancy.	5	
<i>Total for category 6-Aesthetics, Innovation & Education</i>			35	

Total Points for all Categories

	1	2	3	4	5	6	Total
Totals	102	205	214	139	59	35	755
Submitted							
Final							

Some Notes on Reading the Worksheet

The first section of the worksheet describes the prerequisites. The rating categories as outlined on page 1 will follow the prerequisites. Within each rating category, there are items that give the user a chance to accumulate points by satisfying the requirements of each item. Sometimes an item has properties that could place it in more than one category. For example, this happens frequently with items that deal with the use of hot water as this effects both water consumption and energy use. The CCSBP placed all items in the categories only once and we placed it where one would most likely think of it when designing, constructing, or just contemplating a specific building system.

Each of the line items contains more than just a description of the item. You will also see the item number, the number of possible points that can be earned, the stage at which verification of the item shall take place, and an indication if the item must be in the homeowner's manual. Both the "Verification Stage" column and the "Homeowner's Manual" column warrant a bit of explanation, since we are using abbreviations to express what we mean in this columns.

For the "Homeowner's Manual" column, there is a 'Y' for yes, meaning the support documentation for this item must be retained for the manual or an 'NA' meaning it is not applicable or not required that documentation is retained.

For the "Verification Stage" column, we have created a legend for the abbreviations used in this column:

PR= Plan Review **PRA**= Plan Review Attachment **I**=Initial Visit (Committee) **US**=Under Slab Inspection
R=Rough Inspection (Trades) **II**= Insulation Inspection **F**=Final Inspection (Trades) **FC**=Final Committee Inspection

The amount of inspections may seem intimidating at first, but most coincide with the usual building inspections with some added involvement of some CCSBP Committees members as well. Contact the CCSBP Manager for any questions on what is required at inspections or on how they shall occur.

The Steps for Project Certification

1. An over-the-counter initial meeting where the builder obtains information about the program including the application and checklist. If desired by the builder/designer, there is also the option of pre-submitting plans for an initial review and then meeting to go over any suggestions the CCSBP might have.
2. Once the application and checklist are returned to the CCSBP, the builder obtains a yard sign designating their project as part of the Sustainable Building Program.
3. As part of compliance with the program the builder is asked to keep a "homeowner's manual. In this manual they need to save any product/appliance/material specs, any system information-solar/rainwater/graywater, they are asked to take pictures of key installation steps- insulation/systems/Trombe walls/anything that will be covered but needs to be verified.

4. The builder is asked to keep the program up to date on their progress and to schedule times for the program to visit/inspect their progress with their checklist elements.
5. After the builder receives their Certificate of Occupancy, they contact the CCSBP to schedule a checklist cross-check inspection. The builder needs to be present with their plans and homeowner's manual at the time of the inspection. Once the project is evaluated with the checklist and meets at least the minimum requirements, the CCSBP awards the builder and their project at a public event and they receive our Sustainable Building Award plaque. The builder posts this plaque on their home/building.

The Benefits of Project Enrollment in the Free Sustainable Building Award Program

Value By receiving the CCSBP Sustainable Building Award, a project is identified as reaching a level of sustainability that meets national, local and regional requirements. The Program encourages people to build homes that use fewer resources like energy and water, have a smaller carbon footprint, have better indoor air quality, and require less maintenance than homes that don't meet CCSBP certification requirements. Home owners can expect increased comfort, satisfaction, and re-sale values.

Support and Resources Obtain ideas and resources for project design and sustainable building approaches. Acquire assistance with permitting/code compliance questions, and information on available tax incentives and rebates. Use the CCSBP resource directory to find local providers and suppliers for sustainable building products and practices.

Project Recognition Receive recognition through press releases, articles and announcements. Projects are identified as a CCSBP Sustainable Building Project with a yard sign posted at the construction site. Sustainable Building Award Plaques are given at a public award ceremony.

Be a Role Model your building can be a tool for teaching others about conservation, local history and regional characteristics, as well as energy and water efficiency, sustainable design, recycling, renewable energy and much more! Be a part of the solution!

Sustainable Building Program and Checklist Core Values

Community and Regionally Focused

The community focus should include meeting the needs of Coconino County residents, such as affordable housing and sustainable economic development as it relates to green building. The community character, defined by its design, view sheds, gathering places, historic and cultural resources and environmental characteristics, should be celebrated and preserved. The regional focus involves considering the climate, water and energy resources within the county. The International Energy Conservation Code (IECC) defines Coconino County as having a dry climate with moderate heating requirements and no significant cooling requirements. The availability of water in the county is one of the most critical factors in planning for future growth and development.

Affordable, High-Return Methods

CCSBP emphasizes the use of affordable, high rate-of-return building methods, such as passive solar design and energy and water efficiency solutions. The key to saving energy, money, and other resources is to consider the entire building as a system. For example, an energy efficient furnace will burn excess fuel if the ducts, walls, ceiling, windows, and doors are not well-insulated. Simple techniques, such as using an inexpensive programmable thermostat to automatically reduce the building heating load when the building is vacant, can pay for themselves in less than 6 months through reduced monthly energy costs.

Natural and Technical Systems Approach

The building approach should incorporate both natural and technical design aspects. Natural design means approaching the building holistically as a system itself, operating within other systems. It also includes working with the elements of nature, like the sun, wind, topography of the site, etc. Natural design must be married with technical design aspects that employ the best building science practices to optimize performance and prevent building failures.

Optimal Lifecycle Performance Emphasis

Life cycle performance follows and evaluates a building from its earliest beginnings until its end. Beginning with the extraction and manufacturing of building materials and ending with the structure's demolition, optimal life cycle performance assesses building materials on terms of renewability, durability, locality, and reusability or recyclability. Optimal life cycle performance seeks a construction process that minimizes environmental degradation and pollution while maintaining a high level of efficiency. Consideration is given to the entirety of a building's lifespan, measuring the efficiency of its systems and performance of its components. Optimal life cycle performance values structures that are easily maintained, renovated, and retrofitted.

Conservation: Reduce, Reuse, Recycle, Renewable

Reduce, Reuse, Recycle, Renewable is a holistic value that applies to use of the energy and resources that make up a building, as well as those that it consumes throughout its lifetime. In designing and building a sustainable structure, the greatest environmental impact can be made by the reduction of resource consumption. Reducing, therefore, is the most important of the 4 Rs of conservation. Conservation is emphasized in all categories of the checklist.