



## **OWNED REAL PROPERTY SUSTAINABLE REQUIREMENTS**

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The following requirements apply to state departments and institutions of higher education for both vertical and horizontal owned real property. This policy applies to all new construction, any renovation to an existing building, and any improvements on owned real property by the agency. The policy includes requirements for non-building infrastructure, hardscape improvements, landscape and turf owned or modified, and outdoor lighting upgrades. Explanations of the Governor's Executive Orders as they apply to executive departments are included. Statutes on energy benchmarking and construction materials are also included.

The responsibility of a facility owner starts with the planning of a new facility and extends beyond the acceptance of the facility, to the operation and maintenance of the facility, covering both minor and substantial upgrades to a facility, and to the final deconstruction of the facility.

Nothing in this document overrides any building code requirement.

### **REFERENCES:**

1. Colorado Revised Statutes (C.R.S.):

Title 24, Article 30, Parts 13 and 14.  
Title 24, Article 30, Section 2001-2003.  
Title 24, Article 82, Section 601-602.  
Title 24, Article 82, Section 901-902.  
Title 24, Article 92, Section 117-118.  
Title 25, Article 7, Section 142.  
Title 37, Article 60, Section 135.  
Title 37, Article 96, Section 103; and  
Title 37, Article 99, Section 117-118.

2. Executive Orders

D 2022 016: Amending and Restating Executive Order D 2019 016 Concerning the Greening of State Government.  
D 2023 018: Establishing an Office of Sustainability for State Facilities and Operations, Directing the Electrification of Lawn and Garden Equipment Used by State Government, and Directing the Development of a Water Efficient Landscaping Policy for State Facilities.

3. Budget Instructions: issued by the Office of the State Architect and Colorado Commission on Higher Education.

4. OSA Policies and Procedures.

### **SECTION II - DEPARTMENTS WITH AUTHORITY OR RESPONSIBILITIES**

**Department of Personnel & Administration, the Office of the State Architect, and the Office of Sustainability**

The Department of Personnel & Administration ([DPA](#)) provides government agencies the ability to focus their resources on delivering quality services to Coloradans. The Department collaborates with employees, agencies, vendors, and citizens to develop innovative, cost-effective solutions that further the State's ability to conduct its business.

The Office of the State Architect ([OSA](#)), a division within DPA, is responsible for providing support for the following services at state agencies and institutions of higher education: state-funded planning, construction, energy conservation, and real estate transactions. OSA is responsible for establishing minimum building codes for all construction by state agencies and institutions of higher education on state-owned, state-leased, or state-purchased properties or facilities. Code information can be accessed on the OSA [Building Codes](#) website.

[The Office of Sustainability](#), a division within DPA, works across Colorado State Government Departments to advise and support capital planning, procurement, and operations to achieve the State's greening government efforts and goals.

#### **1. Greening Government Leadership Council**

The Greening Government Leadership Council (GGLC) was established through an Executive Order to reflect the State's continued commitment to efficient and sustainable government operations and to meet and surpass the State's goals for reducing greenhouse gas emissions, reducing potable water use, improving indoor air quality, and reducing local pollution across Colorado.

#### **2. Colorado Energy Office**

The Colorado Energy Office (CEO) develops programs and promotes energy policies to combat climate change, improve air quality, and save Coloradans money. [Colorado Energy Office](#)

#### **3. Colorado Department of Education**

The Colorado Department of Education ([CDE](#)) supports and serves the school districts in their work to provide quality learning statewide. CDE has the responsibility for its programs to ensure compliance with this policy and to verify to DPA that the K-12 school district construction projects meet the requirements of this policy.

#### **4. Colorado Department of Local Affairs**

The Department of Local Affairs ([DOLA](#)) serves as the primary interface between the State and local communities. DOLA provides financial support to local communities as well as professional and technical services to community leaders in the areas of governance, housing, and property tax administration.

#### **5. Colorado Department of Public Health and the Environment**

The Colorado Department of Public Health and Environment ([CDPHE](#)) is committed to advancing Colorado's health and protecting the places where we live, learn, work, and play.

### **SECTION III - INFRASTRUCTURE**

Infrastructure includes all the necessary underground utility connections, roads, parking lots, utility meters, exterior lighting, landscaping, turf, irrigation, and any other non-building structures and hardscaping. The real property around a facility construction project may need to comply with the infrastructure requirements. This section applies to both new construction, existing buildings, and landscape improvements.

## 1. Hardscape

All asphalt and concrete must review the [BCCO Act policy](#) for design and construction specifications, as applicable.

## 2. Landscape and Turf (new and existing)

Requirements for State Departments and Institutions of Higher Education:

- a. Limiting the area of frequently irrigated and maintained mowed turf to functional areas.
- b. Prohibiting landscape irrigation between the hours of 11 a.m. and 3 p.m.
- c. Ensure the use of efficient irrigation techniques and, when possible, the use of a seasonally variable irrigation schedule which incorporates the evapotranspiration needs of the plants.
- d. Prioritizing the use of water-wise landscaping for existing and new properties.
- e. Evaluate irrigation systems through water audits where such audits are available from the local water supply entity.
- f. For irrigation of areas exceeding ten acres, use nonpotable water supplies and water reuse, where such supplies and water reuse are available.

## 3. Outdoor lighting

Any new outdoor lighting fixture installed by or on behalf of the state using state funds shall meet the following requirements:

- a. A full cutoff luminaire is required for all fixtures greater than three thousand two hundred lumens (3200).
- b. Minimum illuminance (lighting levels) of the location shall use recognized standards and codes.
- c. The design shall consider cost, energy conservation, glare, light trespass, light pollution, and the preservation of the natural night environment.
- d. The Department of Transportation and the Department of Corrections' Prisons, because of their unique lighting requirements, have options in statute regarding the design and construction of outdoor lighting.

Review C.R.S. 24-82-901-902 for additional requirements for glare, light pollution, and light trespass. There are exceptions in the statute for Federal law or other regulations, temporary lighting, special events, and state prison facilities.

## SECTION IV - NEW BUILDINGS OR THE SUBSTANTIAL RENOVATIONS OF EXISTING BUILDINGS

### 1. Applicable Construction Projects

The High-Performance Certification Program (HPCP) policy requirements apply to state agencies and state institutions of higher education controlling the substantial renovation, design, or new construction of a facility. The policy only applies to state-owned general funded or academic facilities. State enterprise-funded facilities should follow the policy, but it is not a requirement.

Historically designed buildings are not automatically exempted from the HPCP policy requirements. A modification to the HPCP policy requirements will generally be required.

The policy also applies to non-state building construction projects where the state provides at least twenty-five percent (25%) of the project cost. This includes the Department of Education's and the Department of Local Affairs' construction related grants.

## 2. Requirement

The Department of Personnel and Administration, Office of the State Architect has determined that there are numerous national sustainable guidelines that are quantifiable, measurable, and verifiable through an independent third-party process that supports the High-Performance Certification Program (HPCP) requirements. The goal of the HPCP policy is that the facility is certified to the second highest level within the applicable guideline.

## 3. Buildings that are exempt from the policy include:

1. Any building without a heating, ventilation, or air conditioning system.
2. Buildings that are smaller than 5,000 square feet.
3. Temporary structures.
4. State controlled maintenance projects per state statute C.R.S. 24-30-1305.5 (6).
5. Other state or local construction projects with a similar narrowly focused maintenance scope or energy condition.
6. Projects that comply with the International Energy Conservation Code in either applicability conditions (C101.4.1 or C101.4.3) or comply with the low energy building section (C101.5.2) are exempt. Other state or local construction projects with a similar narrowly focused maintenance scope or energy condition.
7. Department of Transportation real property used for right-of-way purposes; and
8. Department of Natural Resources real property of the Division of Parks and Wildlife and State Land Board.

Even if a building is exempt, building owners should apply all the standards and principles of the HPCP policy as cost-effective and practicable for all new construction and substantial renovations, regardless of the building type.

The Office of the State Architect recognizes that there are circumstances in Colorado that are not reflected in national high-performance standards, guidelines, or additional sustainable priorities, and, therefore, will review individual project with a consideration to Colorado goals, values, and laws as part of a project's request for a waiver from this policy or a modification of this policy. See waiver/modification process in Section IV.

## 4. Definitions relevant to the HPCP requirements

An "Academic facility" means any facility, including any supporting facilities, that is central to the role and mission of an institution of higher education. All academic facilities, regardless of source of funds for construction, shall comply with the HPCP policy, C.R.S. 23-1-106 9(b).

An "Auxiliary Facility" means any facility, including any supporting facilities, funded from an auxiliary source or any facility that has been historically managed as an auxiliary facility.

"Substantial Renovation" means any renovation where the project's construction cost exceeds twenty-five percent (25%) of the value of the building.

## 5. Additional Sustainable Priorities

Required for state projects, recommended for CDE, and DOLA projects.

Review the list of OSA priorities within the applicable sustainable guideline to include in the design and construction of a building, and the applicable criterion that supports the OSA priorities.

## SECTION V - EXISTING BUILDINGS

## 1. Introduction

Over the life span of a building, the total cost to operate and maintain a building significantly exceeds the building's initial construction cost. The general rule of thumb is that the construction cost is about 15% of the total cost of owning a building. The other 85% is the operating and maintenance cost over the life of the building. A poorly maintained building will directly increase the utility cost and other operating costs. A poorly maintained building will also result in failures of building components, resulting in disruptions to building occupants and their programs. A benefit of a building utilizing the HPCP program is that the building's design and budget are determined on both long-term operational and maintenance factors and the construction cost. Projects developed based on just a low first cost will result in a greater operating and maintenance cost.

## 2. Facility Management

The Office of the State Architect (OSA), Colorado Department of Higher Education (CDHE), and the Office of the State Planning and Budgeting (OSPB) require that all agencies establish and maintain a [facility condition audit](#) and infrastructure assessment program. The benefit of the evaluation is to create or update a comprehensive document that identifies and quantifies building systems/components and the associated costs to renovate, retrofit, restore, and maintain "existing buildings" to a "like new" condition. The audit will serve to acquaint administrators and maintenance personnel where deficiencies exist, with the overall condition of their buildings, and will provide concise information that will assist in long-range planning and budgeting activities. The audit will provide the facilities services management/maintenance personnel with data that will aid them in prioritizing building renewal and deferred maintenance projects. In addition to the building audit, an analysis of the campus, facility, or agency infrastructure will identify where deficiencies exist because of the age of the equipment, the frequency of work orders, or where the infrastructure has reached or exceeded design capacity.

Each agency and institution should establish a preventative maintenance program. Preventative maintenance (PM) is defined as a program in which wear, tear, and change are anticipated and continuous corrective actions are taken to ensure peak efficiency and minimize deterioration. PM involves a planned and controlled program of systematic inspection, adjustment, lubrication, and replacement of components, as well as performance testing and analysis. The result of a successful PM program extends the life of facilities and equipment and minimizes unscheduled downtime that causes major problems. It ensures that equipment is operating properly, and unscheduled breakdowns are held to a minimum. The facility audit program, in conjunction with a PM program, will provide an agency or institution the necessary tools to properly maintain its owned facilities and prioritize major capital renovations or controlled maintenance requests.

## 3. Utility Management

What you measure, you can manage. Each agency or institution needs to develop a utility management program. The program should track all utilities: electricity, natural gas, water, purchased steam, sewage, and any other energy provided resource. If the utility usage is further "recharged" to users within a campus, then the recharged values should be tracked. The program used to track utilities needs to track all the information on a bill to separate consumption values from fixed values. Without adequate information, it is difficult to determine utility usage problems and the annual budget impacts from these systems. For buildings greater than 50,000 square feet, the state has a benchmarking reporting requirement ([Colorado's Building Performance Program](#)). Buildings outside of the benchmarking requirement should utilize the EPA's ENERGY STAR program to track performance. Additionally, any building subject to OSA's HPCP program (certified by a sustainable building program, CX buildings are exempt) needs to track building performance and have that information available to OSA if requested.

#### 4. Energy Performance Contracts

Energy performance contracts (EPC) provide an alternative funding source for a state agency to repair and/or upgrade its facilities. Energy performance contracts avoid future energy costs from increased facility energy efficiency as the method to fund facility improvements over the life of the lease-purchase energy performance contract. An EPC could be the preferred funding option for some maintenance projects. If the project has the potential of substantial energy savings and cost avoidance, then each department is required by the executive order on Energy Performance Contracts to evaluate the request as a potential EPC project. Information on EPC can be obtained from the Governor's Energy Office, Commercial and Public Buildings, Existing Building website, [Governor's Energy Office](#).

### **SECTION VI - Building Life Cycle Cost Analysis Requirement**

The general assembly authorizes and directs state agencies and state institutions of higher education to employ design and construction methods for real property under their jurisdiction, ensuring that building life-cycle cost (BLCC) analyses and energy conservation practices are employed in new or renovated real property. The BLCC analysis shall consider the building's economic life, in addition to its initial cost of construction, the building's design, the analysis of alternative building energy consuming systems, the cost for operation and maintenance, the estimated cost of major system replacement, over a study period of 30 years. All state agencies and state institutions of higher education are required to analyze the building life-cycle cost (BLCC) of all real property constructed or renovated, over its economic life, in addition to the initial construction or renovation cost.

Additional information is available in the BLCC policy on the OSA [Owned Real Property Sustainable Requirements website](#).