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DEPARTMENT OF DEFENSE EDUCATION ACTIVITY

DoDEA Facilities Management Guide
Sustainability and Energy Efficiency Program Guide



Version 2.0 –August 2017

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ACRONYMS

A/E	Architect/Engineer
AFCEC	Air Force Civil Engineer Center
ASHRAE	American Society of Heating Refrigeration and Air Conditioning
AT/FP	Anti-Terrorism / Force Protection
BAS	Building Automation System
BOD	Basis of Design
CAPM	Construction Agent Project Manager
Cx	Commissioning
CxA	Commissioning Authority
DoD	Department of Defense
DoDEA - Americas	Department of Defense Education Activity - Americas
DoDEA-Pacific	Department of Defense Education Activity – Pacific
DoDEA-Europe	Department of Defense Education Activity – Europe
DoDEA	Department of Defense Education Activity
GPC	Guiding Principles Compliance
HPSB	High Performance Sustainable Building
LCCA	Life Cycle Cost Analysis
MILCON	Military Construction
NAVFAC	Naval Facilities Command
O&M	Operations and Maintenance
OPR	Owner’s Project Requirements
PDT	Project Delivery Team (consists of everyone necessary for successful development and execution of all phases of the project)
PM	Project Manager
TM	Technical Manager
TPC	Third Party Certification (Certified)
UFC	Unified Facilities Criteria
USACE	United States Army Corps of Engineers

1.0 PURPOSE

This guide provides minimum requirements in compliance with the Department of Defense Sustainable Buildings Policy and guidance to achieve high performance and sustainable buildings within the Department of Defense Education Activity in compliance with UFC 1-200-02.

2.0 APPLICABILITY

This guidance is applicable to all planning, design and construction, renovation, repair, operations and maintenance, and affixed equipment installation in new and existing buildings, regardless of funding source, that result in Department of Defense Education Activity real property assets. Exceptions and/or deviations to this guidance require written approval from DoDEA Headquarters. This guidance is effective for all projects beginning in Fiscal Year 2018 (FY19 programmed MILCON projects). Refer to UFC 1-200-02 Section 1-4 & Table 1-1 for UFC applicability.

3.0 REFERENCES

UFC 1-200-02, High Performance and Sustainable Building Requirements

Guiding Principles for Sustainable Federal Buildings and Associated Instructions

4.0 RESPONSIBILITIES

4.1. Department of Defense Education Activity, Headquarters (HQ DoDEA)

HQ DoDEA is responsible for providing support to achieve compliance with the provisions of this guide.

HQ DoDEA will provide the following:

- Oversight for the development, application, and accountability for policies, procedures, and standards pertaining to the Sustainability and Energy Efficiency Program.
- Support the DoDEA Regional Offices in achieving sustainability and energy efficiency goals.
- Review projects for compliance with DoDEA goals.

4.2. DoDEA Regional Offices (DoDEA-Americas, DoDEA-Europe, DoDEA-Pacific)

The DoDEA Regional Offices will provide local oversight to ensure Project Delivery Teams (PDTs)

are executing projects in compliance with the standards in this guidance document.

DoDEA Regional Office will provide the following:

- Oversee the application and accountability for policies, procedures, and standards pertaining to the Sustainability and Energy Efficiency Program.
- Review projects for compliance with DoDEA goals.
- Work with PDT and users to identify opportunities to utilize “the school as a teaching tool” through integration of sustainable features of the school facility with the school’s educational mission.

4.3. User

The User is defined as a representative(s) from the intended occupant of the facilities included in a project. This should include school faculty and administration, District Superintendents Office, Information Technology, Safety/Security, and Logistics. The Construction Agent will work with the Regional Office and User to identify opportunities to utilize “the school as a teaching tool” through integration of sustainable features of the school facility with the school’s educational mission.

4.4. Construction Agent

The Construction Agent (USACE, NAVFAC, or AFCEC) is responsible for providing technical guidance on implementing the DoDEA Sustainability and Energy Efficiency requirements into each project. The Construction Agent is responsible for proposing the appropriate solutions to ensure full compliance with UFC 1-200-02. The Construction Agent Project Manager (CAPM) is responsible for managing the technical team (A/E and in-house team). The CAPM should be proactive in engaging the Installation and ensuring their participation in the sustainability and energy efficiency activities.

The Construction Agent will provide the following:

- Select and implement a Third Party Certification (TPC) method that is cost effective, regionally appropriate, and complies with UFC 1-200-02.
- Establish sustainable requirements and milestones to properly meet the certification requirements of the selected TPC method.
- Review projects to ensure full compliance with UFC 1-200-02 and meet DoDEA goals.
- Manage all sustainability and energy efficiency activities during all design and construction phases.
- Confirm sustainable features are installed and operate properly at project closeout.
- Acquire CxA services.

4.5. Installation

The Installation is responsible for working with the PDT to identify potential sustainability and

energy efficiency strategies that are successful and have been implemented locally.

4.6. DoDEA Design Center – Norfolk District Technical Manager (TM)

The Norfolk District TM supports both the Construction Agent PM and DoDEA Regional Office as a technical subject matter expert. The Norfolk District TM will provide reviews on both functional and programmatic levels to verify compliance with DoDEA Education Facilities Specifications and DoDEA energy and sustainability goals.

5.0 PROCEDURES

5.1 Minimum Requirements

All projects must comply with the minimum requirements and guidance established in UFC 1-200-02 *High Performance and Sustainable Building Requirements*. The method used to achieve compliance with UFC 1-200-02 is determined by the PDT with primary input from the Construction Agent Project Manager (CAPM).

The method chosen to achieve compliance with UFC 1-200-02 and Third Party Certification (TPC) should not rely on a DoDEA operational commitment once the facility is in use. TPC credits or points that require this commitment should not be counted towards certification.

The following are required sustainable features and services for DoDEA facilities:

- Energy dashboard (refer to DoDEA Technology Systems Design Guidelines, DoDEA Special Systems Version 2.0)
- Demonstration photovoltaic and wind turbine station
- Total building commissioning (Commissioning Owner Project Requirements (OPR) documentation shall adhere to ASHRAE Guideline 0 Informative Annex J Owner's Project Requirements. Commissioning Plan shall adhere to ASHRAE Guideline 1 section 5.2.3)

The following are undesirable sustainable features for DoDEA projects:

- Living/green walls (living air bio-filters)
- Green roofs / rooftop gardens
- Waterless urinals
- Excessive use of solar tubes (however, project must meet UFC daylighting requirements)
- Preferred parking for low-emitting and fuel efficient vehicles
- Electric vehicle charging station

5.2 Parametric Phase Requirements

During the development and execution of the Parametric 15% Design phase, the following sustainability and energy efficiency activities will be conducted to establish the baseline for the

project to be used during subsequent design phases.

- The PDT will establish the project sustainability and energy efficiency performance goals and establish the appropriate budget to be included in the project programming documents.
- The PDT will complete an initial DoDEA UFC 1-200-02 High Performance Sustainable Building Compliance Checklist (Appendix A) and identify the method of compliance for the project.
- The CAPM will ensure that the UFC 1-200-02 compliance checklist has been properly coordinated with all applicable stakeholders during the Parametric 15% Design phase of the project.
- The A/E will conduct life cycle cost analysis (LCCA) on all sustainability and energy efficiency systems to validate life cycle effectiveness.

Refer to the Parametric Design Charrette Instruction on budgetary requirements. This funding amount will be maintained through the life of the project.

5.3 Design Phase Requirements

During development and execution of the Design phase at a minimum the following sustainability and energy efficiency activities will be conducted:

- The PDT will review and validate goals and compliance requirements during the design charrette.
- The PDT will update the DoDEA UFC 1-200-02 compliance checklist and submit it during each design submittal for review. The checklist submitted from the project's final design submission will be approved by the CAPM, the USACE Design Center, DoDEA Regional Office PM, and HQ DoDEA.
- The A/E will submit a brief narrative for each UFC HPSB point listed in compliance checklist describing how the requirements are being addressed in the project.
- The PDT will ensure that all UFC 1-200-02 compliance and TPC supporting documentation is submitted for each design submittal.
- The PDT will develop the Owner's Project Requirements (OPR) at each major design milestone and completed at the end of the design phase.
- The A/E will develop and implement a complete design phase and draft construction phase commissioning plan.
- The CxA will conduct commissioning design reviews of the OPR, basis of design, and design documents beginning no later than 35% concept design and all subsequent design submission.

5.4 Construction Phase Requirements

During the construction phase, at a minimum, the following sustainability and energy efficiency

activities will be conducted:

- The PDT will conduct a preconstruction conference to discuss UFC 1-200-02 compliance requirements, goals, roles and responsibilities during construction.
- The CxA will finalize the draft construction commissioning plan.
- The CxA will review contractor construction submittals applicable to systems being commissioned for compliance with the OPR and basis of design. This review must be concurrent with the review of the A/E and CAPM. The CxA will verify the installation and performance of the systems to be commissioned.
- The CxA will complete a summary commissioning report.
- The CxA will be involved in reviewing the operation of the building with the Facility Manager responsible for operations and maintenance (O&M) and occupants within ten months after BOD and include a plan for resolving outstanding commissioning-related issues.
- The PDT will complete a final signed DoDEA UFC 1-200-02 compliance checklist and submit it at project closeout. This form shall be coordinated with the construction contractor.

APPENDIX A:
DoDEA UFC 1-200-02 High Performance and Sustainable Building
Compliance Checklist



UFC 1-200-02 High Performance and Sustainable Building Compliance Checklist (v_07/2017)

Project Name	
Project Number	
Date/Phase Completed	
Prepared By	

Element Color Coding:	
Entry/Drop-Down Box Selection	Compliance Indications:
Data-Entry Subquestions	Yes - Compliant with Element
No Entry	Maybe - Possible Compliance
Not Required	No - Not Compliant with Element

Federal Requirements for High Performance Sustainable Buildings (HPSB)			
HPSB I: Employ Integrated Design Principles (UFC 1-200-02 para 2-2)			
Achievable Points	0	Possible Points	2
	HPSB I.1	Integrated Design	1
	HPSB I.2	Commissioning	1
HPSB II: Optimize Energy Performance (UFC 1-200-02 para 2-3)			
Achievable Points	0	Possible Points	6
	HPSB II.1	Energy Efficiency, Achieve Option A or B and insert design percentage	1
	A	Reduce energy use 30% Below ANSI/ASHRAE/IESNA Standard 90.1- 2007, OR	
	B	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1-2007, will the design achieve the maximum level of energy efficiency that is life-cycle cost-effective?	
		Insert percentage below ANSI/ASHRAE/IESNA Standard 90.1-2007 in terms of energy use (e.g. 32)	
		Insert building energy intensity (Btu/SF) calculated with the energy model per 10 CFR 433	
	HPSB II.2	Energy Efficient Products	1
	HPSB II.3	On-site Renewable Energy	1
		Lifecycle cost assessment found renewable energy generation projects not effective	
		The following renewable energy generation systems were found lifecycle cost effective:	
		Renewable energy type	
		Insert first renewable energy type, if applicable	
		Insert second renewable energy type, if applicable	
		Insert generation capacity (kW)	
		Insert percentage of total building	
	HPSB II.4	On-site Renewable Energy - Solar Hot Water Heater System	1
		Lifecycle cost assessment found solar hot water heater system not effective	
		When lifecycle cost effective, solar hot water system installed - min 30% demand	
		Insert percentage achieved	
	HPSB II.5	Narrative Requirements	1
	HPSB II.6	Metering	1
		Water Metering: Select N/A if not used	
		Electric Metering: Select N/A if not used	
		Natural Gas Metering: Select N/A if not used	
		Steam Metering: Select N/A if not used	

HPSB III: Protect and Conserve Water (UFC 1-200-02 para 2-4)		Possible Points	5
Achievable Points	0		
	HPSB III.1	Indoor Water	1
		Meet requirements of ASHRAE standard 189.1 sections 6.3.2, 6.4.2, & 6.4.3	
		Use water-efficient products (e.g. EPA Watersense)	
	HPSB III.2	Indoor Water Metering	1
	HPSB III.3	Outdoor Water	1
		Reduce Potable Water Use by 50%	
		Provide water meter for irrigation systems serving > 25,000SF, LCCE	
		When irrigation is provided, show preference for contractors certified through a WaterSense program	
	HPSB III.4	Stormwater Management	1
		Meet the requirements of UFC 3-210-10. Per EISA Section 438, when disturbance > 5,000 GSF, manage the 95th percentile rain event onsite and to the maximum extent possible, maintain the pre-development hydrology,	
	HPSB III.5	Process water potable water use	1
		Energy efficiency measures using water were considered and the cost was included in lifecycle cost assessment	
		Energy efficiency measures using water were not considered for the design	
HPSB IV: Enhance Indoor Environmental Quality (UFC 1-200-02 para 2-5)		Possible Points	7
Achievable Points	0		
	HPSB IV.1	Thermal Comfort	1
		Meet the requirements of ASHRAE 55-2004	
	HPSB IV.2	Ventilation	1
		Meet the requirements of ASHRAE 62.1-2007	
	HPSB IV.3	Daylighting	1
		All classrooms and offices must have daylighting	
		Comply with ASHRAE 189.1 Section 8.4.1.2 or 8.5.1.2	
		Maximize the use of automatic dimming or manual lighting controls, where life cycle cost effective, per UFC 3-530-01.	
	HPSB IV.4	Moisture Control	1
	HPSB IV.5	Low Emitting Materials	1
		Meet the requirements of ASHRAE 189.1 Section 8.4.2	
	HPSB IV.6	Protect Indoor Air Quality during Construction	1
	HPSB IV.7	Environmental Tobacco Smoke Control	1
	HPSB IV.8	Occupant Health and Wellness	1
HPSB V: Reduce Environmental Impact of Materials (UFC 1-200-02 para 2-6)		Possible Points	6
Achievable Points	0		
	HPSB V.1	Recycled Content	1
		RCRA Section 6002 compliant products	
	HPSB V.2	Biobased Content	1
		Preference for products with high biobased content	
	HPSB V.3	Sustainable Products	1
		Preference for products with federally recommended Ecolabels	
	HPSB V.4	Ozone Depleting Compounds	1
		Meet the requirements of ASHRAE 189.1 Section 9.3.3	
	HPSB V.5	Waste and Materials Management - Storage and Collection of Recycling	1
	HPSB V.6	Waste and Materials Management - Divert 60% from Disposal	1
HPSB VI: Address Climate Change Risk (UFC 1-200-02 para 2-7)		Possible Points	1
Achievable Points	0		
	HPSB V.1	Address Climate Change Risk	1
HPSB Totals		Possible Points	27
0	Federal Requirements Achieved (27 line items)		
0	Federal Requirements Maybe Achieved		
0	Federal Requirements Not Achieved		
0%	Overall Compliance with High Performance Sustainable Buildings (HPSB) Guiding Principles		

Title/Organization	Printed Name	Digital Signature
Construction Agent PM		
Design Center PM		
DoDEA Regional Office		
HQDoDEA, Facilities		

* Signatures Required at the RTA Submission and Project Closeout