PROGRAMMING STANDARDS

DFCM DESIGN MANUAL
UNIVERSITY OF UTAH SUPPLEMENT

January 15, 2016

PROGRAMMING STANDARDS PURPOSE
University of Utah Supplement

GENERAL INTRODUCTION TO THE UNIVERSITY OF UTAH SUPPLEMENT:

The DFCM Design Manual "Programming Standards" (State of Utah, Department of Administrative Services, Division of Facilities Construction and Management, referred to herein as "DFCM Manual" or "Manual") dated March 15, 2006, is the basis for programming services provided for all University of Utah projects.

This document accepts the DFCM Manual as the University of Utah standard, and supplements the Manual with additional programming requirements which are needed to satisfy University organization and mission objectives.

The reader is directed first to the DFCM Manual, then to this supplement where added requirements are preceded by "*ADDED*" and paragraph alterations required to accommodate University processes are preceded by "*REVISED*."

To remain consistent with the DFCM Manual, this supplement is organized in a format matching that of the parent Manual. Only portions of the parent Manual are reproduced in this supplement, either as navigation guides or as altered paragraphs. DFCM text is presented in a gray font. University additions and insertions are presented in normal font.

ADDED:

The purpose of this standard is to set forth the requirements for facility programming services for DFCM and the University of Utah.

ADDED:

Programming services shall define and provide a cost estimate for the project within the constraints of the "Agreement between DFCM and the Programming Consultant." or the agreement between the Programming Consultant and the University of Utah.

ADDED:

REVISIONS SUMMARY
for the University of Utah Supplement:

REVISION DATE	SUMMARY OF CHANGE
06 January 2012	Specific University of Utah programming needs were removed from the former Design Standards Chapter 1. Text was extensively revised and updated. University programming standards were formatted to match the layout of the DFCM Manual, and issued as a supplement to the Manual.
06 January 2012	Campus Design & Construction. CD&C has changed to *Construction Project Delivery*
06 January 2012	Facilities Planning. Facilities Planning has changed to *Campus Planning*
06 January 2012	Business Services. Business Services has changed to *Facilities Business Services*
06 January 2012	Plant Operations. Plant Operations has changed to *Facility Operations*

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PROGRAMMING STANDARDS

University of Utah Supplement

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1.0   GENERAL

1.1   General

A.   Purpose and Scope

1.   Programs shall comply…

ADDED:

Programs shall comply with the project budget as identified in the approved CBE. It shall also include a proposed schedule for design and construction.

2.   The intent of the Program Standards…

ADDED:

b.   The expectation is for professional quality work in terms of content and presentation. The program document will be used by individuals with and without technical backgrounds and should be easily understood by both.

(1)   The executive summary must be presented in clear and concise language that effectively communicates purpose, objective, results, recommendations, and explains assumptions.

(2)   A well-organized document that facilitates finding specific information is essential. Page numbers are required.

(3)   The responsibility for the quality of the program document rests entirely with the Consultant. The Consultant may seek general advice from members of the steering committee, but should not expect them to be active participants in the writing or mechanical editing.

(a)   Mechanical editing refers to consistency in capitalization, spelling, hyphenation, table format, use of abbreviations, and so forth; correctness of punctuation, including ellipsis points, parentheses, and quotation marks; the way numbers are treated; consistency between text, tables, and illustrations; and citation format.

(4)   Editing should be completed prior to presenting the document for review. It is difficult to read for content if the material is presented in an error-laden package.

(5)   Use the most effective format and style for the program document.

    (a)   The overall design, illustrations, graphics, charts, and other artwork used should facilitate the inevitable need to copy, duplicate, or print all or part of the document later on.

    (b)   Use standard page sizes. Documents that use 8½" x 11" paper with a portrait layout are the easiest to file. For this size of document, use foldout pages for oversize illustrations only. Foldouts must be sized to require unfolding in one direction only with the folds being parallel to the binding. The foldout page should not exceed 11" x 17" when the page is unfolded. Each foldout page should be assigned a page number and caption that are immediately visible to the reader when opening the book, without unfolding the page. Printing on the back of a foldout page is permitted, but should be avoided.

    (c)   Double sided printing is encouraged; however, only on pages other than foldout pages where appropriate.

ADDED:

4.   A "Scope" is defined as the basic requirements, goals, design objectives, etc. of the project. The University Project Manager may prepare a scope statement or assign this task to the Consultant. The scope of a project defines the design and construction limits for the intended work.

    a.   Typically, the purpose of the programming phase is to analyze the requirements of a proposed program of specific activities with respect to the area and other facility related needs required for the building to accommodate the identified activities. This typically includes a parking plan coordinated with Commuter Services, a detailed site analysis, an estimate of circulation space, identifying limitations or requirements, such as congruence with the Campus Master Plan. The program does not address the specific design, it calculates but does not dimension space; and it does not lay out each and every contingency that could be encountered at some future time. It addresses each item in a programmatic way, such as: adjacency, type, and quality of a space to meet a specific need. While there are details that need to be documented and analyzed, such as utility requirements, multimedia or communication needs, or security issues, etc., the specific design, detailed dimensions, and specific layout will be determined in the design phase.

5. General statement regarding University meetings:

    a. There will be official University committees that will be organized as appropriate through University channels. For any committee formed through this process, meeting agendas are to be provided in advance of each of the meetings, and meetings minutes will be distributed to all committee members after each meeting. The University Project Manager will be copied on all project correspondence.

2.0 FACILITY PROGRAM

2.1   **General.**
A "Program" is defined as…

ADDED:

A program can further be described as a scope document prepared for larger projects. It is nonspecific in design and layout, but specific in defining the requirements, scope, and expectations of each portion of the new or remodeled facility. It becomes the official guide and reference for all aspects of the project. The subsequent design must comply with the program.

A. Programming Process

    1. Pre-Program Documents

        a. Furnished by the University, these documents inform the preliminary description, space list, square footage analysis, site analysis, and cost estimate/project budget. The following plans are considered basic source documents for the development of the program.

            (1) The University of Utah's Strategic Academic Plan

                (a) The strategic academic plan guides and directs the physical and facilities planning on campus.

                (b) A strategic academic plan describes the present and future academic priorities of the college. Therefore, a current strategic academic plan for an academic University unit approved by the Cognizant Senior Vice President for Academic Affairs or the Cognizant Senior Vice President for Health Sciences is typically submitted to the Associate Vice President ("AVP") for Facilities Management prior to the start of programming.

                (c) A strategic academic plan provides clear criteria to guide University decisions on which programs should grow, and which should be reorganized, redefined, or eliminated based on the University's ability to discern,

and respond to, long-term fundamental trends in the field of practice and in society in general.

(d)   A strategic academic plan enables the University to evaluate the mix and viability of academic and professional programs, recognizing that many fields of scholarship have enduring value that transcends current interest.

(e)   Specific considerations in a strategic academic plan can include such considerations as the following:

    (*i*)   Size of programs, both academic and research.

    (*ii*)   Academic balance and diversity of disciplines that are primarily theoretical, and those that involve direct experience with tangible subjects in the studio, laboratory, or field.

    (*iii*)   Amount of interdisciplinary teaching and research programs.

    (*iv*)   Action plans to either improve, or to phase out and eliminate, programs that do not fully measure up to a standard of excellence.

    (*v*)   Development of ideas for new initiatives both within and across disciplines.

    (*vi*)   Identification of themes of exceptional promise.

    (*vii*)   Target key benchmarks of student engagement including level of academic challenge, active and collaborative learning, enriching experiences, student-faculty interaction, and institutional support.

    (*viii*)   Developing a mission balance between research, education, and public service.

(f)   It is the purpose of the strategic academic plan to provide a framework for such decisions.

(2)   Business Plan

(a)   For a non-academic University unit, Facilities Management recommends that a current business plan approved by the Cognizant Senior Vice President for Academic Affairs or the Cognizant Senior Vice President for Health Sciences, if available, be submitted

to the AVP for Facilities Management prior to the start of programming.

(b)   A business plan is a formal statement of a set of business goals, the reasons why they are believed attainable, and the plan for reaching these goals. It may also contain background information about the organization or team attempting to reach those goals.

(c)   Business plans may also target changes in perception and branding by the customer, client, or larger community.

(d)   When the existing business is to assume a major change or when planning a new venture – a 3 to 5 year business plan guides the programming process.

2.   Program Preparation and Cost Estimate

The program architect adheres to applicable adopted construction and fire codes, these Design Standards (DFCM Design Manual, University of Utah Supplement), the Campus Master Plan, DFCM requirements; and, submits a draft estimate(s) to the program group to establish a firm project budget with itemized cost summary.

3.   Program Document - First Review

The program architect submits the document for review to the program group. Comments are returned to the Consultant for implementation into the document.

4.   Program Value Management Session

The revised document is reviewed for value enhancement by assignees of the program group. Selected action items are submitted to the program architect for document revision.

5.   Final Program Document

Completed copies of the document are submitted to the program group for final endorsement by each group.

6.   Funding for Construction

The need for accurate and complete programs and program cost estimates for construction projects is critical.

7.   Cost Analysis

Include a "list of assumptions" about the program cost estimate. This "list of assumptions" is intended to help the design architect have greater understanding

of the program estimate. The "list of assumptions" is not intended to control or direct the design architect in any way.

8.   Format

The final format of each program document will vary to reflect the nature of the project, but the basic arrangement of information should follow the format suggested by the programming guide.

9.   Minimum Distribution Requirements for Program Document

a.   Six total printed copies will be required. Printed copies shall be 8½" x 11" or 11" x 17".

b.   Ten total electronic copies will be required. Electronic copies will be searchable PFD format on CDs.

c.   Six printed copies and five electronic CD PDF copies will be distributed by the University Project Manager as follows:

(1)   2 printed copies and 1 CD to the user department/college (primary user group representative)

(2)   1 printed copy and 1 CD to the department of Campus Planning

(3)   1 printed copy and 1 CD to Director, Facility Operations

(4)   1 printed copy and 1 CD to the department of Construction Project Delivery

(5)   1 printed copy and 1 CD to the DFCM Designated Representative

d.   Five electronic CD PDF copies will be distributed by the University Project Manager as follows:

(1)   1 CD to the Cognizant Senior Vice President

(2)   1 CD to the Cognizant Vice President for Administrative Services

(3)   1 CD to the Cognizant Associate Vice President for Facilities Management

(4)   1 CD to Director, Construction Project Delivery

(5)   1 CD to Director, Space Planning & Management

2.2 **The completed program shall include, but is not limited to the following:**

A.   Signature Page

     ADDED:

     1.   University of Utah Pre-design Phase Signature Sheet (See Appendix A).

B.   Executive Summary

     3.   Programming team.

     ADDED:

     a.   Program Consultant

     b.   University Steering Committee

        (1)   A University steering committee is a small committee responsible to make final decisions regarding the scope, design and expenditure of funds for a Capital Development project. Consultants, contractors, project managers and working committees are ultimately responsible to the steering committee for approval and funding of their work. The steering committee should consist of the following people:

           (a)   Cognizant Senior Vice President, Vice President, Dean or designee

           (b)   Associate Vice President for Facilities Management

           (c)   Director, Construction Project Delivery

           (d)   Deans

           (e)   Others as approved by the AVP for Facilities Management

        (2)   Ex-officio staff on the committee in an advisory capacity:

           (a)   University Project Manager as assigned by Facilities Management

           (b)   DFCM Designated Representative

           (c)   Campus Planner from Campus Planning

           (d)   Director, Commuter Services

           (e)   Director, Office of Sustainability

           (f)   Director, Space Planning & Management

<div align="center">(g)   Director, Facility Operations</div>

      (h)   Others, as approved by the AVP for Facilities Management

    (3)   The steering committee should be assembled at the beginning of the project and should plan on meeting as required. Meeting once a month is an average frequency. More frequent meetings may be necessary, but meetings need not be held unless necessary. The objective is to keep the steering committee informed regarding progress, and make decisions in order to keep the project moving forward

c.   Working Committee

    (1)   The working committee is a group that meets on a regular and frequent basis. Meeting weekly is an average frequency. The group will be engaged with consultants to inform the programmatic and functional features of the project. It is important to include members and users that possess operational and program knowledge of the project's major features.

    (2)   The working committee is facilitated by the assigned University Project Manager working in conjunction with the Consultant(s), and includes the cognizant dean or University unit administrator, facility occupants as determined by the dean or University unit administrator, the ex-officio staff on the steering committee above or their designees, as well as staff assignments and representatives from Facility Operations other departments as appropriate

D.   Space use program

    1.   Site considerations

        ADDED:

        a.   Must include verification that new structure will not be placed over existing underground utilities.

E.   Detailed space use descriptions

    3.   Program spaces summary

        ADDED:

        a.   Utah State Higher Education (USHE) Adjustments to Inventory Matrix (See Appendix B).

H.   Cost Analysis

1.   Project estimate

ADDED:

a.   The University will provide a *Utility Impact Assessment Cost* which the program architect will include as a line item in the program cost estimate.

b.   The program architect's cost estimator shall submit a list of recent comparable projects used to develop cost data for the program estimate. The comparables are to include square footage costs for each room type.

c.   Include efficiency percentages and benchmarks from national models that adhere to the current Postsecondary Education Facilities Inventory and Classification Manual (FICM) standards.

3.   Construction cost estimate description

a.   Detailed estimate

ADDED:

(1)   The space list shall be used to develop the construction cost estimate and associated square footage analysis. Each room or space type shall be listed with associated square footage costs.

(2)   The space list and square footage analysis must use the University's definitions of building areas (gross area, assignable area, and non-assignable area).

(3)   The construction cost estimate shall be developed in the CSI format.

(a)   The square footage costs for each room type shall be subdivided to represent estimated costs in each of the CSI divisions.

(b)   Include a CONSTRUCTION COST ESTIMATE SUMMARY REPORT listing the costs apportioned to each CSI division in tabular form, totaled for the final estimate.

(c)   Include construction contingency allowance and overhead & profit costs for the Contractor and subcontractors.

(4)   Include costs attributable to the site, such as:

(a)   Access, circulation, parking

(b) Utilities (existing, relocated, new, plans to abandon, etc.) Non-State-funded projects will require utility metering and utility costs.

(c) Site improvements

(d) Replacement of outdoor lighting that does not meet current standards

(e) Contextual issues

(5) Include costs attributable to the building, such as:

(a) Space lists with square footage (as described above)

(b) Net-to-gross ratios

(c) Acoustical requirements

(d) Structural requirements

(e) Seismic requirements

(f) Code requirements

(g) ADA accessible route costs
ADA accessible route costs can amount up to 20% of the construction budget for alterations to existing buildings or additions in some cases.

(h) Integrated branding, showcasing, donor recognition and way finding (see Appendix "C")

(i) Special systems
Auxiliary departments within the building will require separate metered utilities.

(6) Include costs attributable to general project costs:

(a) Site survey
(b) Asbestos consultant
(c) Utilities mapping
(d) On-site costs
(e) Geotechnical report
(f) Off-site costs
(g) Environmental assessment
(h) Testing and inspection
(i) Hazardous materials abatement

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(j)   Sewer fixture fee

(k)   Programming costs

(l)   Escalation to bid date

(m)   Design fees

(n)   Construction contingency

(o)   Reimbursable costs

(p)   System commissioning

(q)   Design contingency

(r)   Moving and occupancy costs

(s)   Value management

(t)   Fixed and moveable equipment

(u)   Furnishings consultant fees

(v)   Lock cylinders by University

(w)   Furnishings

(x)   University telecommunications (UIT)

(y)   Signage & graphics

(z)   Electrical high volt terminations

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2.3   **Introductory Information**

A.   Title Sheet

    ADDED:

    3.   DFCM Project Number and University Project Number

B.   Signature Sheet

    ADDED:

    1.   Appropriate signatures should include the following:
    (See APPENDIX A for University of Utah required format.)

2.4   **Executive Summary**

B.   Organization

    2.   Space Requirements Summary…

    ADDED:

    a.   New buildings require the following (major remodels also require the following if not already existing):

        (1)   Shipping/receiving dock

        (2)   Mail receiving/distribution room

        (3)   Grounds storage room with single entrance from the building exterior

b.　　The dock, mail room and ground storage room are required unless an exception is approved by the University steering committee.

2.7　　Individual Space Outlines

　　D.　　Area Space Summary Sheet.

　　　　2.　　Identify the net to gross factor.
　　　　　　ADDED:
　　　　　　a.　　Identify source of the net-to-gross factor.　Sources may include the following:

　　　　　　　　(1)　　DFCM guide.　This is only appropriate for early drafts of the program.　Ultimately more complete analysis of this factor is required.

　　　　　　　　(2)　　Program analysis (indicate page number)

　　　　　　　　(3)　　Other sources (indicate source)

　　　　　　　　(4)　　Floor plan studies.

ADDED:

2.9　　Common Mistakes and Pitfalls

　　A.　　Common Pitfalls
　　　　The items listed below are descriptions of common pitfalls.　The University suggests that programmers can take precautions with the following:

　　　　1.　　Shortcomings in Site Analysis

　　　　　　a.　　It is often discovered in design and construction that major cost items have not been discovered in the site during programming.　These problems may have to do with the following among others:

　　　　　　　　(1)　　Incomplete asbestos surveys
　　　　　　　　(2)　　Inadequate net square footage
　　　　　　　　(3)　　Unrealistic assumptions about the space needs of users
　　　　　　　　(4)　　Inadequate assigned storage
　　　　　　　　(5)　　Inadequately sized basic rooms and spaces for functions
　　　　　　　　(6)　　Undiscovered hazardous waste
　　　　　　　　(7)　　Location of seismic fault lines
　　　　　　　　(8)　　Bad soils conditions
　　　　　　　　(9)　　Capacity of existing utilities
　　　　　　　　(10)　　Location of existing utilities

(11) Existing utilities that are already at capacity

(12) ADA accessible paths and parking

b. Inadequate Net-to-Gross Factor

(1) The tendency is to expect too much efficiency in buildings. The DFCM guides for net-to-gross are only guides.

(2) When the net-to-gross factor is defined too conservatively in the programming phase, then ultimately during design phase, more space is added to the building to compensate without a commensurate increase in cost per SF. Less is spent per square foot and the building quality comes down.

(3) Fully analyze the cost impact of all independent surveys including soils and hazardous materials.

c. Program needs and not wants without adequate budget coverage. Things to consider:

(1) Don't please the users by programming items or details that are too explicit in nature.

(2) Don't program design solutions without compelling reasons to do so.

(3) Don't rely on previous programming for the projects without thorough evaluation and verification for accuracy.

(4) Often the University assembles extensive information for the programmer. Make sure all owner/user provided information is understood in the context of the source.

d. Promises made to donors without prior steering committee approval.

ADDED:

APPENDIX "A" University of Utah Pre-Design Signature Sheet
APPENDIX "B" Utah State Higher Education Adjustments to Inventory Matrix
APPENDIX "C" Integrated Branding, Showcasing, Way Finding and Donor Recognition

APPENDIX A: University of Utah Pre-Design Signature Sheet

University of Utah Review Signatures

We have reviewed the [*document name*] and warrant that it adequately represents our request for a facility to fulfill our mission and programmatic needs. All appropriate parties representing the University have reviewed it for approval.

Dean or University Unit Administrator   Date

Cognizant Senior Vice President   Date

Project Manager, Facilities Management   Date

Director, Construction Project Delivery   Date

Director, Facility Operations   Date

Campus Planner, Campus Planning   Date

Director, Campus Planning   Date

Associate Vice President, Facilities Management   Date

Vice President, Administrative Services   Date

Division of Facilities Construction & Management, State of Utah

I have reviewed the [*document name*], jointly prepared with the University for approval.

DFCM Designated Representative   Date

APPENDIX B: Utah State Higher Education Adjustments to Inventory Matrix

In order to facilitate the Capital Request process as mandated by the State Board of Regents, please complete the following matrix. All room use definitions can be found in Chapter 4.1 of the Post Secondary Facilities Inventory and Classification Manual (FICM): 2006 Edition. [http://nces.ed.gov/pubs2006/2006160.pdf]

Disaggregate the following FICM category 200 Series Laboratory Facilities into:

210/220 Class Lab/Open Lab (and service) Formally or Informally scheduled instruction laboratories {Section 4.3.1} and 250 Research and Non – Class Labs (and service) Space used for laboratory experimentation, research or training in research methods. {Section 4.3.1}

Utah System of Higher Education	*Date*	
Capital Facilities Qualification and Prioritization Process		
FY 2008- 2009	*Initials*	

Form Q&P 2 -- Adjustments to Inventory for Renovations/New Construction in Progress (Pipeline)

Institution: University of Utah

Project #1 Project Name	Existing Q&P Space to be Deleted[2]	Existing Q&P Space to be Renovated[2]	Classification of Q&P Space after Renovation[2]	New Q&P Space[2]	Non-Q&P Space Added/ Renovated/ Deleted (Net)[2]	Total (c) + (d) + (e)
	(a)	*(b)*	*(c)*	*(d)*	*(e)*	*(f)*
100 – Classroom [1]						0
200 - Teaching Labs						0
250 - Research Labs						0
300 - Office						0
400 - Study						0
520 - P.E. Special Use						0
500 - Other Special Use						0
600 - General Use						0
700 - Support						0
800 - Health Care						0
900 - Residential						0
000 - Unclassified						0
Subtotal - Net Assignable						0
Non-Assignable/Structural						0
Total						0

The room classifications [1] are defined in the FICM document and could just be referenced.
The Q&P[2] space should be reviewed by Space Planning & Management

APPENDIX C: Integrated Branding, Showcasing, Way Finding, & Donor Recognition

The University of Utah has seen success in recent new building projects that have integrated the mission of the institution, department or division into the core architectural design and form as well as an overlay of displays, donor recognition and exhibits.

The Sutton Geology and Geophysics Building is one example of the immersive environment that can be created when "integrated branding," "showcasing," "way finding," and "donor recognition" is planned during the design phase.

Building on this recent success, it is an expectation of the University of Utah that "integrated branding," "showcasing," "way finding," and "donor recognition" be fully integrated throughout new buildings. "Integrated branding," "showcasing," "way finding," and "donor recognition" will include donor recognition and signage; and, theme elements celebrating the disciplines and programs of the facility, both academic and research. Inspiring themes will likely originate from the history, culture, faculty background and experience, academic and research enterprise, connections with donors, and future aspirations of programs within the new facility. Development of these branding, showcasing and recognition themes and design approaches will require significant time in research and interviews to develop the ideas that inspire, interest, and engage the students, as well as the broader community.

In order to give "integrated branding," "showcasing," "way finding," and "donor recognition" proper focus and scope, a defined budget amount will insure an effective integration takes place during design and construction. The budget includes costs normally allocated to donor recognition. Furthermore, work on the package will need to occur during the design phase and often requires a specialized sub-consultant focused on the effort. Finally, an appropriate budget amount of approximately 2% should be allocated within the project budget.

Donor recognition and signage should be coordinated with "integrated branding," "showcasing," and "donor recognition"; and, signage includes all building signage, including room signs, interior way finding, and other related signs. It does not include campus designated exterior building identification signs which will be directed by the campus. There is a campus standard for those signs, and the project will have to pay for them, but they are not part of "integrated branding," "showcasing," "way finding," and "donor recognition."

Additional information on "integrated branding," "showcasing," "way finding," and "donor recognition" can be obtained from Facilities Management.