University of California San Diego

TRANSITION TO OPERATIONS and BIM GUIDELINES Version 2.0: March 7, 2022

DATA PACKAGE

Credits and Acknowledgements

A team within the UC San Diego Capital Program Management (CPM) developed these Guidelines with the support of an external consultant, VueOps. Input and needs were gathered from three facilities operations and maintenance groups within the University: Campus FM, Housing, Dining, and Hospitality (HDH), and the Medical Center. Additional needs by Campus Planning were also incorporated into this Guidelines.

Capital Program Management

March and Darrah EATA	D	N	Dessions	Endermanter
MIChael Koush, FAIA	Program	i Manager.	Business	Enterprise
1,11,011,000,0011, 1,111,100,000,000,000			2 40111000	

Facilities and Services Information Management

Kirk Belles	Principal Administrative Analyst
Diana Henderson	Space Analyst

Campus FM

Jason Kayne	Director, Facilities Management
Aaron Smith	Facilities Assessment Program Manager
Wendy Schiefer	Assistant Director, Work Management
Richard Cota	Assistant Director, Building Operations
Jose Moret	Assistant Director, Building Operations

Housing Dining Hospitality (HDH)

Ron Joyce	Director, IT Services
Scott Hostler	Senior Superintendent
Aaron Mahn	Senior Superintendent
Cleveland Freeman	Superintendent
Justin Haley	Information Systems Analyst

Medical Center

Clar	r Courth		Tashaiaal	Summout Amalua	+
Clay	/ South	Facilities	Technical	Support Analys	ι

VueOps

Aaron Peterson	Director
Sean Doolan	Senior Manager
Arundhati Ghosh, PhD	Senior Manager

Contents

1.	Tra	nsition-to-Operations (T2O) Program Overview	.4
	1.1	Intent	.4
	1.2	T2O and BIM Guidelines Applicability	.5
	1.3	Organizational Roles	.6
	1.4	University T2O and BIM Goals	.8
	1.6	Ownership	.9
2.	Fac	ility Data Requirements for Project Execution	.9
	2.1	Facility Data Introduction and Planning	.9
	2.2	Facility Data Collection	22
4.	Def	initions	26
A	ttachm	ent 3 – University Facility Data Specification (FDS) and Data Collection Template	28
A	ttachm	ent 4 – Deliverables Schedules	35

*Note that specific sections of this Guidelines have been intentionally omitted from the Data Package version, as they do not pertain to this requirements package.

1. Transition-to-Operations (T2O) Program Overview

1.1 Intent

The T2O and BIM Guidelines are part of an initiative for the University of California San Diego ("UC San Diego" or "University") to develop standards for data-centric processes and the application of BIM that impact the facility life cycle for design, construction, and operations activities. This document is meant to describe the goals of the University for delivering quality data into the University's life cycle management systems ("LCM"), e.g., Computerized Maintenance Management System ("CMMS"), space management, Geographic Information System ("GIS"), and the University's Facility Information Management ("FIM") system. Beyond goals, the Guidelines define the baseline expectations for facility data delivery and BIM practices, protocols, and modeling quality with a specific focus on managed assets critical to the life cycle management process based on industry best practices and the current capabilities of available software applications. The University expects consultants, contractors, and the entire project team to be committed to the delivery of facility data, regardless of project size or delivery method. The use and delivery of CAD and/or BIM as primary design, documentation, coordination, collaboration, and visualization tools should also be implemented for larger and more complex projects.

For purposes of these Guidelines, "digital data" is defined as information, including communications, drawings, specifications, and designs, created or stored for a project in digital form, including those developed by the project team, and the University and its consultants, for use in preparation of two-dimensional (2D) printed hard-copy construction documents using Computer Aided Design (CAD) and Building Information Modeling (BIM) software, three-dimensional (3D) model deliverables, and facility data deliverables as specified by the UC San Diego Facility Data Specification (FDS). Digital data will be used for planning, design, construction, commissioning, turnover, and operations and maintenance purposes.

1.2 T2O and BIM Guidelines Applicability



Asset and location (space) data sits at the foundation of all T2O and BIM design and construction projects at the University. Every project regardless of size or complexity requires the project team to analyze the project scope against the "managed assets" type list found within the Facility Data Specification (FDS). If the scope of the project involves the removal, modification, or installation of "managed assets", the project team will be required to follow the **Data Requirements** package. The data requirements consist of the submission of two spreadsheets or tables: one containing a full list of rooms (spaces) involved in the project and another containing a full list of managed assets in the project. Both tables contain additional columns of data, or "attributes", which are described in **Attachment 3 – University Facility Data Specification**. The master asset table is commonly aggregated from multiple discipline-specific asset tables which are submitted with increasing amounts of attribute data over the life of the project. See **Table 1.2** for a summary of the required planning and data deliverable submissions contained in the Data Requirements package.

Any questions as to the applicability of this Guidelines to a project or the comprehensiveness of the Guidelines should be directed to UC San Diego Capital Program Management. Table 1.2 summarizes the main required deliverables that are relevant to each requirements package.

Plan DeliverableData Deliverable		Project Timing	Data Package	CAD Package	BIM Package
Facility Data Deliverables Req	uired				
<u>Deliverable Name</u>	<u>Related Requirement Doc</u>				
Maintenance Responsibility Documentation	Sec 2.1.g	Design 100% CD	•	•	•
Project-Specific FDS	Sec 2.1.g, Att. 3	Design 100% CD	•	•	•
Facility Data Deliverables Schedule	Sec 2.1.g, Appx A2	Design 100% SD	•	•	•
Data Submissions (Data Drops) - Asset Tables (.XLSX)	Att. 3	Multiple ¹		•	•
Data Submissions (Data Drops) - Location Table (.XLSX)	Att. 3	Design 100% CD	•	•	•
Consolidated Asset and Location Table(s) (.XLSX)	Sec 2.2e, Att. 3	Closeout		•	•

Table 1.2 Summary table of requirements package definitions

Project closeout submittals including O&M manuals, as-built drawings and product data, warranty documentation, photos, spares and attic stock, service maintenance agreements, and other miscellaneous submittals are critical digital data for the efficient operation and maintenance of University facilities. See the UCSD Division 1 Specifications (**01 77 00 Closeout Procedures** and **01 78 00 Closeout Submittals**) for requirements on closeout submittals.

This Guidelines document uses intentional graphics to highlight 1) when there is a deliverable related to a section and 2) when a deliverable requires a specific and University-provided format or template be used by the responsible party. The graphics are as follows:





1.3 Organizational Roles

The University understands the need for intentional organizational roles to ensure the successful implementation of T2O practices at the project level. On the University side, the focus is on specification, oversight, and validation of data delivery, while on the project consultant and contractor side, the focus is on planning and collection of project data.

The term "**project team**" will be used to refer to the collection of contracted firms involved in the planning, design, construction, commissioning, and turnover of the Project inclusive of the following: the Architect, General Contractor, and all University consultants providing input to deliver a project, including trade partners and third-party consultants preparing information intended to become part of the Contract Documents.

Data submission tables are divided according to discipline and trade. Project team members responsible for data submissions will be referred to as "**data authors**". Data submissions occur cumulatively over the project lifecycle in a sequence of data drops and may be worked on by one or multiple project team firms. Data authors for each data submission should be identified through the facility data deliverables schedule (**Attachment 4 – Deliverables Schedule**) and the Authors worksheet of the Data Collection Template.

Facility data submission contents are determined by the **Attachment 3 – University FDS**. For information on data submission planning, responsibility, and timing, see **Section 2 Facility Data** Requirements for Project Execution.

At the discretion of each project team firm, the **data author** function is a role that may be filled by one or more project team member(s) with another primary function within the project team and need not be on their own a full-time, dedicated position.

The project team will designate one representative to coordinate data submissions, track submission dates for all project team submissions, and hold data authors accountable for meeting their deliverable requirements. This representative will be referred to as the "**Project Team Lead**". The project team lead is typically the construction manager or general contractor, however, the Team may designate any project team member to act in this role.

The University will have multiple stakeholders involved in the specification, oversight, and management of the T2O work. The University will appoint a representative or a team of representatives who will support the University Project Manager in facilitating the implementation of the Guidelines at the project level. The term "**data manager**" will be used to refer to this representative throughout this document. This University representative will be identified at the project outset by the University Project Manager. The data manager will oversee and guide the facility data collection process and help clarify facility data requirements as it relates to the project by liaising with the required University facilities groups. The data manager will coordinate the scheduling of T2O deliverables with the project team lead and will perform quality control checks for each set of data submissions.

The University may also involve a facilities management representative, referred to as "**facilities manager**" or "**Owner (FM)**", to provide guidance on facility data needs. The facilities manager will work closely with the data manager to resolve any questions and clarifications on facility data requirements that arise from the project team if they are not answered by this Guidelines document.



Figure 1.3.1 Project roles summary diagram.

1.4 University T2O and BIM Goals

a. Create and maintain world-class facilities

In alignment with UC San Diego's vision to grow leaders to drive innovation, the University is committed to creating and maintaining world-class facilities for their students, faculty, and the community at-large. UC San Diego acknowledges that managing world-class facilities starts with a strategy to plan, design, specify, construct, commission, operate and maintain its' assets and asset data in a standardized and structured manner. Efficiently transitioning digital design and construction data to facilities LCM systems are critical elements to achieving this goal.

b. Achieve day one operational readiness by implementing a facilities information strategy to support the overall goal for efficient turnover of digital data to facilities operations systems.

The University aims to specify and incrementally collect and validate data to meet their goals for operational readiness on Day 1 of occupancy. Prior to project closeout, the validated facility data set will be transferred into the relevant LCM systems to support operations and maintenance functions. To meet this objective, it is important that the guidelines presented in this document be followed. Housing Dining Hospitality (HDH), UC San Diego Facilities Management (FM), and UC San Diego Health will be the primary users of the project digital data. Digital data will be translated from the project team deliverables into file formats that are compatible with CMMS applications. Digital data will also be used to update the University's GIS dataset (ArcGIS) and space management system (Tririga). Additional departments may express interest in working with project digital data on specific University projects and may provide additional model or data requirements to the project that are not contained in the Guidelines.

Transfer of information between project digital data deliverables and LCM software will be tested by the University data manager at milestone intervals planned with the Project Team Lead to validate the deliverables (Section 2 of this Guide). Incremental data collection and transfer of project digital data to LCM systems will be one of several ways the University will assess and validate acceptability of deliverables from the Project Team over the project lifecycle.

1.6 Ownership

The University has ownership and all rights to all digital data including all models and facility data created or developed by consultants, subconsultants, contractors, subcontractors, and vendors in relation to a project under which this Guideline or portion of this Guideline applies to. The University may make use of this data following any deliverable.

In contributing content to data deliverables or models, model authors, and data authors do not convey any ownership right in the content provided or in the software used to generate the content. Unless otherwise granted in a separate license, any subsequent model or data authors and model users right to use, modify, or further transmit the model(s) or data is specifically limited to the design, construction, and turnover of the Project, and nothing contained in this Guideline conveys any other right to use the model(s) or data for another purpose.

2. Facility Data Requirements for Project Execution

The next section discusses what is expected of project teams through the facility data planning and collection activities.

2.1 Facility Data Introduction and Planning

The University's goal to achieve day one operational readiness of its' facilities post-construction provides the motivation to develop practices to efficiently transfer project digital data from design and construction to the University's LCM systems. During design and construction, project teams collect a wealth of facility data that is incredibly valuable to the University's facility operations and maintenance processes.

a. What is an asset?

The University aims to collect facility data in a structured format as documented in the facility data specification (FDS). The University defines an in-scope managed asset that falls within the governance of the FDS, referred to as "**managed asset**", as any installed item that physically resides within or servicing a facility and fulfills any of the following:

- a. Requires routine maintenance or has a preventive maintenance schedule
- b. Has attributes a facility engineer would need to reference in performing a work order
- c. Is not consumable or otherwise replaced on a predetermined schedule

d. Identified as an asset category by a UC San Diego Facilities group as requiring asset data Due to the changing nature of building technology, there may be cases where new types of equipment or systems are in a project that do not exist in the FDS. Any assets in a project not specified in the FDS as a managed asset category but falling within the above criteria should be brought to the attention of the data manager. The data manager will work with the facilities manager to determine if the assets are in-scope and the required facility data to be collected.

b. What is the Facility Data Specification?

The Facility Data Specification (FDS) is a document describing the University information requirements for managed assets. It documents the asset attributes project teams must collect and submit for each asset category on capital projects.

See Attachment 3 for the full UC San Diego facility data specification. An accompanying "UCSD FDS and Data Collection Template" spreadsheet is also available as a working version of the FDS.

The asset categories of interest for facilities maintenance are listed in the FDS format. The format is a spreadsheet that utilizes the **OmniClass[™] Description** to normalize the naming of the asset categories, (1) in the figure below. Project teams work using varying language and vocabulary and the FDS format requires Teams to create a project-specific mapping in the (2) "**Asset Category Project Name**" column, so the project team can work using the terminology of their choosing. The term "category" is used to refer to this project team asset type name and what is entered in the asset table deliverables. The FDS also indicates data requirements related to the asset categories such as the preferred tag format (Column I), which facilities group requires the asset category (column J), and if certain additional attributes are required for submission, such as serial number or barcodes (columns M through P).

	В	С	D	E	F	G	н		J	к	L	м	N	0	Р
1			(1		<u></u>									
2	Facility Data	Specification													
3			A Classification			* Oustam assist	fas data antes						Extended Att	ributer	
-			II classification		· · · · · · · · · · · · · · · · · · ·	Asset category project values	Tor Gata entry						C Extended Atta	noutes	
5	System	Product class	 OmniClass number 	OmniClass name	Assigned Author	name	liotes	UCSD tag format	 UCSD required by 	Unique -	Area serving	Serial 🗸 B	arcode FM	Barcode MC	Barcode HDH
36	D20 Plumbing	23-27 17 00: Pumps	23.27.17.04	Drainage Pumps			tormwater drainage pump		Al						
37	D20 Plumbing	23-27 17 00: Pumps	23.27.17.13	Centrifugal Pumps					Al						
38	D20 Plumbing	23-27 17 00: Pumps	23.27.17.13	Centrifugal Pumps	XYZ Mechanical	Pumps			Al	Image: A start and a start					
39	D20 Plumbing	23-27 17 00: Pumps	23.27.17.35	Sewage Ejectors			anitary sewage pump		Al				V	Image: A start and a start	Image: A start and a start
40	D20 Plumbing	23-27 23 00: Heat Exchangers	23.27.23.00	Heat Exchangers	Frontline Plumbing	Heat Exchangers			Al						
41	D20 Plumbing	23-27 23 00: Heat Exchangers	23.27.23.15	Shell and Tube Heat Exchangers					Al				2		
42	D20 Plumbing	23-27 27 00: Pressure Reducing Stations	23.27.27.00	Pressure Reducing Stations	Frontline Plumbing				MC	~					
43	D20 Plumbing	23-27 29 00: Tanks and Storage Structures	23.27.29.19	Tanks	XYZ Mechanical	Domestic Water Tank			FM,HDH	Image: A start and a start			V		
44		23-27 29 00: Tanks and Storage Structures	23.27.29.19.02	Gas System Tank					FM				Image: A start and a start		
45		23-27 29 00: Tanks and Storage Structures	23.27.29.19.04	Gray Water Tanks					FM,HDH				I		
46		23-27 29 00: Tanks and Storage Structures	23.27.29.19.05	Potable-Water Storage Tanks	Frontline Plumbing				AL				2		
47	D20 Plumbing	23-27 29 00: Tanks and Storage Structures	23.27.29.19.06	Sanitary Tanks					FM,HDH				S		
48	D20 Plumbing	23-27 29 00: Tanks and Storage Structures	23.27.29.19.08	Domestic water expansion tank (plumbing)	XYZ Mechanical				Al				Image: A start and a start		
49	D20 Plumbing	23-27 31 00: Valves	23.27.31.00	Valves	Frontline Plumbing				FM.MC						
50	D20 Plumbing	23-27 31 00: Valves	23.27.31.00	Valves					FM.MC						
51	D20 Plumbing	23-27.31 00:Walves	23.27.31.11	Backflew Perventors a men.	A		and the set	and a second of the	Minh		mak Look .				
_	water of the local division of the	and the second se	a provide states a	and the second second		a general and			and the second s	and a loss	- 10 J	have a start	And and a second se	and and	
		and an and an an investment	22.12	Distance of France	concernance and		and the second s			1.41		172		1.4	121
- 19	03011740	23-27 23 00: Heat Exchange C	20.27.20.10	Plate and Prame					CALLER			2		× .	
00	DODHVAC	23-27 29 00: Tanks and Storage Structures	23.27.29.19	Tanks	10/7 March and and		-		FM,HDH						
81	DSUHVAC	23-27 29 00: Tanks and Storage Structures	23.27.29.19.07	Domestic water expansion tank (nvac)	XYZ Mechanical		-		All			2	2	2	2
82	DSUHVAC	23-27 31 00: valves	23.27.31.00	Valves					FM,MC						
83	DOUHVAC	23-27 33 UU: Valve Actuators	23.27.33.11	Electrical valve Actuators					FM,HDH			-			
84	DBUHVAC	23-27 55 00: Liquid Treatment Components	23.27.55.36	Liquid Separators (rivac)			Air Separators		FM						
85	D30 HVAC	23-27 57 00: Gas Treatment Components	23.27.57.27	Air Filters					FM,HDH						
86	DODITIVAC	23-33 11 UU: Commercial Bollers	23.33.11.00	Commercial Boilers					All						E C
87	DSUHVAC	23-33 11 UU: Commercial Bollers	23.33.11.13	Condensing Boilers					AI			Z	<u></u>		
	$\langle \rangle$	Readme UCSD Facility Codes	Building Sproject	Trades = Facility Data Spec	fication 🗄 Loc	ations Docume	nts (3) Assets Supp	ort tables 🕘			۹				

Figure 2.1.1 Excerpt of the University FDS highlighting the asset category names using OmniClass[™] and the mapped project-specific asset category names. See the "**UCSD FDS and Data Collection Template**" Excel file for full FDS.

c. What is facility data?

Every unique asset and location (space) requires collection of a set of attributes. Each managed asset is grouped into its general functional grouping (**category**). All assets within or serving a facility belong to that facility. The category that an asset belongs, and the managing facilities department for the asset, will determine the other attributes that must be collected.



Figure 2.1.2 Facility data concept with Facility-Category-Asset hierarchy. Not all required attributes are shown for visual simplification.

Facility data is collected for all instances of managed assets and locations. Facility data are the attributes that describe various design, dimensional, functional, performance, and business characteristics about each managed asset.

The figure below lists the full scope of possible attributes for any specific managed asset and location at UC San Diego including the "**common attribute data**", required for **all** managed assets, and the category-dependent "**extended attributes**". The **University FDS** lists the extended attributes that must be collected by project teams on a category basis.

In addition to asset data, the project team must also assemble a table of locations or spaces. The locations table is a master list of spaces within the project facility. The full location list of spaces is created as an input for the asset data since asset "Location" must exactly match a "Level" or space "Name Number" location attribute value.

The compilation of all project location and asset data comprises the "facility data".



Figure 2.1.3 Facility Data requirements for project teams including location and asset data. Note: There are some exceptions for "Field Data". HDH requires barcode numbers for all asset categories, but no serial number for some. See FDS worksheet for specific cases where this occurs.

d. Who is the data for?

J
UCSD required by
All
FM HDH
All
FM,HDH
All
FM,MC
FM,MC
All and and

Facility data is collected for each facilities department; HDH, Campus FM, and UC San Diego Health (Med Center). The FDS column J (left) indicates if one or more of these departments requires asset data to be collected for each listed asset category.

The data will be received from each data author and compiled across all data drops and trades/disciplines for the facility by the Project Team Lead or delegated responsible party. The data manager is responsible for taking compiled data deliverables and formatting into the necessary Maximo or other CMMS format(s). Both asset and location (space) data are needed to setup the work order structure and maintenance schedules for managed assets so the facilities can be operated efficiently and with minimal interruption to users and occupants.

Note that each facilities department has their own list of required categories. Some categories may require serial numbers and barcodes for one department while

another department may not require them. See the Attachment 3 - University Facility Data **Specification** for a comprehensive list of all differences between department facility data requirements.

Extended Attributes - Mechanical Dry (Campus FM)

e. Planning Facility Data Delivery

Facility data is delivered through use of the **University Data Collection Template**. The Template is a Microsoft Excel spreadsheet that has two functional components:



an FDS worksheet that allows the Team to review data requirements and identify project asset categories and responsible data authors



asset and location tables that standardize the input of facility data by each data author

The Data Collection Template can be found combined with the FDS in the spreadsheet working file "**UCSD FDS and Data Collection Template**". One spreadsheet file should be prepared per facility in the case of projects with multiple facilities. Data authors typically submit one data collection template file for each data drop.



Asset data is submitted by data authors incrementally to allow for adequate review and cycle time by the data manager if there are questions that arise from the project team. These incremental submissions are referred to as "**data drops**". Each data drop is further segmented by trade or discipline, so the relevant data author is preparing only the facility data for the scope that has been assigned to them. Each data drop should be timed in alignment with a project task that releases data for incorporation into the asset and location tables.

Data drop one is commonly prepared after design has been completed (100% CD's or equivalent). This timing is recommended to allow for the full design intent to develop including asset tag values and location. Most assets are assigned a unique tag value by the design team and the data author should enter the tag as it appears on drawings and schedules. Some assets only receive a "type tag", such as drinking fountains and light fixtures. In these cases, the data author should enter the type tag value in the asset table and discuss with the data manager and project team lead the unique tag format to be applied. The unique tag should incorporate the type tag as a prefix if possible. The data author may choose to assign unique tags at data drop one or may wait until data drop two.

Once unique tag (UCSD Tag) values are assigned to assets that only received type tags from the design team, the data author should either incorporate the unique tags into the design drawings or provide a marked-up PDF plan showing the specific location of these assets with their unique tags along with the asset table deliverable.



Figure 2.1.4 Some assets are given unique tags by the design team and some are only given type tags. Assets with type tags must be assigned a unique tag by the data author, and location marked up on drawings or incorporated back into design.

Data drop two is recommended to be timed in alignment with the end of the product data submittals phase for the related trade. Drop two should incorporate only approved product data by the data author. As a result, it is recommended the deliverable be prepared after the last anticipated round of resubmissions and approvals for that trade. If a data author has a large window of time for all product data submittals in their scope, they should plan a phased submission for drop two with the project team lead. Location is typically entered at data drop two but may be entered later if a BIM-enabled process is used to associate locations to assets.

Data drop three is usually timed to align with the availability of asset data related to commissioning. Serial numbers may be extracted from startup reports, if they exist for the asset in question, or may need to be taken from placards affixed to the physical asset. Barcode values are the barcode numbers taken from barcode labels that are provided by the facilities group responsible for maintenance of the specific asset. Barcode labels are typically applied during the commissioning process prior to project closeout.



Figure 2.1.5 Asset data submission timing occurs sequentially at different data drops. The above diagram shows example facility data over three data drops for one drinking fountain asset. The project team lead and data manager should decide if all data drops for a given set of assets should be delivered by one data author or if a handoff between two or more authors is required, due to factors such as timing of trade onboarding and if there is any trade BIM process involved.

Locations Table



Location (space) data is submitted by the project architect around the 100% CD or equivalent design issuance. It is important for the Project Team Lead to obtain the locations table prior to the entering of location values in the assets table. The locations table format in the **Data Collection Template** should be used by the data author providing this information.

The locations table submission should coincide with the Space Management review process that occurs at 100% CDs. See **Attachment 2 Space ID Guidelines** and **Attachment 6 CAD Standards** for more information on space-related design deliverables and review. The outcomes from the space ID review process should be reflected in the locations table. Facility space "**Name**" and "**Number**" in the locations table should match room names and numbers as shown on architectural floorplans, unless otherwise discussed and agreed upon with UC San Diego Space Management and Planning. In some cases, it may be preferable to use signage room numbers if they differ from numbers shown on architectural floorplans.

The Project Team Lead should ensure that the Data Collection Template starting file provided to data authors contains the reviewed and approved list of locations prior to the data drop where authors are expected to submit location values in the assets table. The list of locations should be entered in the Locations worksheet in the Template spreadsheet file.

For projects involving existing facilities with existing space, the University Project Manager should

obtain records of space management floorplans and space numbers (identifiers) from Space Management and Planning at the start of the project to provide to the Project Team. The data author assigned responsibility for the locations table should incorporate existing spaces into the table if space numbers will change due to the project or when space numbers will remain, but new managed assets will be installed in the existing space. The data manager should work with the facilities manager(s) to ensure alignment of space names and numbers between records already establish in the CMMS and the project locations table.

f. Facility Data Source and Formatting Requirements

Attribute values for facility data must be entered with specific data types to be accepted for use by University LCM systems. **Table 2.1.6** and **2.1.7** lists the constraints around facility data values that may be entered into asset and location tables for each attribute and the expected source of the asset data.

Free Text Attributes

Attributes with a data type of "text" may be any free text value except for those that have parenthetical qualifiers. The "Facility" attribute may be any free text value, however, the value must be approved by the University and be the same for all assets within the same facility. The "Tag" attribute may be any free text value as shown on design documents and the value must be unique (not repeated) for assets within the same category.

Constrained Attributes

Attributes with a data type of "picklist" must match the list of values that they are derived from. For example, the "Category" attribute must match the project-specific asset category list from the project-specific FDS (see University FDS).

The "Barcode" attribute is always a number and must match the barcode label number applied to the physical asset. Each managing department has their own barcoding system and will supply barcode labels through coordination with the data manager.

Attribute Name	Data Type	Attribute Description and Data Source
UCSD Managing Department (Managed By)	Picklist	HDH, FM, MC, or a combination of the three. FM group at the University having maintenance responsibility. See FDS for differing data requirements for each department.
Facility ("UCSD HDH Description" or "UCSD FM Description")	Text (Fixed)	Facility name. Decided by UC San Diego. Same value for all assets within each facility. These attributes are entered on the "UCSD Facility Codes" worksheet.
Asset Category Project Name	Picklist	Term used to refer to asset or equipment type from project design documents (drawings, equipment schedules, or specifications). Entered in the FDS worksheet which links to the dropdown on the Assets sheet.
UCSD Tag	Text (Unique)	Unique asset identifier value as defined on design docs. If no unique tag is assigned, data manager to prescribe a pattern for data authors to implement, incorporating type tag.
Туре Тад	Text	Non-unique asset identifier defined on design docs for assets of the same type (e.g., light fixtures, fire extinguishers). Only required if "UCSD Tag" is not defined by design team.
Location	Picklist	From architectural floor plans. Value may either be a Level or the concatenation of space "Name Number" from locations table.
Manufacturer	Text	Manufacturer company name from approved product data submittals.
Model	Text	Model number for the product from approved product data submittals.
Serial	Text	Asset serial number from startup reports or physical placards. A unique identifier for an installed product generated by the product manufacturer. Extended attribute (not required for all assets).
Barcode (**)	Number	Barcode number matching HDH, FM, or Med Center barcode label values. Extended attribute (not required for all assets).
Area Serving	Text	From single-line, riser diagram, or design plans. Location or list of locations (level or space "Name Number" from locations table) that the asset provides its service to, for mechanical dry-side assets only. Extended attribute (not required for all assets).

Table 2.1.6 Asset data type and source.

** is :	placeholder for either	"FM", "	"MC", or "HDH	" barcode.	See Data	Collection	Template.
---------	------------------------	---------	---------------	------------	----------	------------	-----------

Attribute Name	Data Type	Attribute Description and Data Source
Managed By	Picklist	HDH, FM, MC, or a combination of the three. FM group at the University having primary maintenance responsibility for the space.
Level	Text	From architectural floor plans. See Space ID Guidelines for level numbering convention. Format with the word "Level" followed by the level number.
Name	Text	Space name in capital case as they appear on architectural floor plans record documents.
Number	Text	Space number as they appear on signage. If no signage, use architectural floor plan space number. Ensure this column is formatted as text in Data Collection Template to avoid formatting errors.

Table 2.1.7 Location data type and source.

g. Project Startup Planning Tasks

There are four main facility data planning tasks that should be completed by the project team before the start of data collection. These tasks are:

- 1) Determine and document maintenance responsibility (UCSD managing department)
- 2) Create the project-specific FDS
 3) Document the data authors to data drops assignments
 4) Create the facility data deliverables schedule

Determine Maintenance Responsibility

Since each facilities group has their own unique list of required asset categories, the first step for a Team is to identify through the University Project Manager which facilities group the project will be turned over to for operations and maintenance. Most projects have only one involved facilities group, however, some have multiple groups involved.

For projects involving multiple facilities groups, the University project manager may work with representatives from each facilities group to describe in a narrative format, the responsibility breakdown for each group. This narrative may be organized by building or system and include marked up or colorized floorplans to communicate physical boundaries of responsibility. This package of documentation should be considered by the Project Team when determining if assets within spaces and systems managed by each facilities group will be required or not in the facility data deliverables.

Prior to developing the project-specific FDS, the University FDS should be filtered by the asset categories that are of interest for the project according to the facilities groups who will be maintaining the facilities.

Create the Project-Specific FDS



After the FDS category list has been filtered according to the managing facilities group(s), the project team will need to identify the managed asset categories that fall within the scope of their project. The **UC San Diego Facility Data Specification** (FDS) contains all possible asset categories that are currently being maintained by each facilities group. The Project Team must cull down this master list to a "project-specific" FDS using a mapping process which is setup in the FDS spreadsheet. See the **Readme** section of the **Facility Data Specification and Data Collection Template** worksheet for instructions on creation of the project-specific FDS.

UC San Diego

ient-Level FDS Categories .27.55.38: Liquid Separators (plumbing) .27.55.27.11: Water Softeners		
23.29.37.13: Emergency Eye Wash Stations	Project-Specific FDS Categories	Project Category Name
23.27.17.00: Pumps	23.27.55.38: Liquid Separators (plumbing)	Air Separators
23.29.37.15: Emergency Showers	23 2717 00 [.] Pumps	Pumps
23.27.17.13: Centrifugal Pumps	22.22.15.21: Hudronic LIV/AC Hostore	Radiant Heaters
23.27.21.04: Air Compressors	25.55.15.21: Hydrollic HVAC heaters	rtaalante hoatel 5
3.33.11.21: Water Tube Boilers		
23 33 15 21. Hydronic HVAC Heaters		

Figure 2.1.8 Conceptual graphic representing the process of creating the project-specific FDS from the UC San Diego FDS. The project-specific FDS is based on a review of the asset categories that occur within the project as shown on construction drawings and a review of project building systems.

Document the assignment of data authors to data drops



The Project Team Lead will work with the data authors to determine the full scope of asset categories contained within the project, which is documented in the project-specific FDS. The assignment of data authors by data drop should be entered in the "**Authors**" worksheet, then assigned to each respective asset category in the project-specific FDS ("**FDS**" worksheet). The first batch of data collection template files should indicate the data drop one Authors. See FDS figure 2.1.9 below.

Note the "Assigned Author" column list pulls from a drop-down of project data authors entered in the "Authors" worksheet, which should be populated first.

D		E			F		G	н	1
2									
3									
4 凸 Classification								\land Custom project values for da	ta entry
5 OmniClass number	OmniClass name		LOD	Matrix		Assigned Author		Asset category project name	Notes
6 23.17.11.00	Doors		23.17	.11.00: Doors		Ace Architecture	-Drop One	Metal Doors	Main entrance doors only, not all exterior doors
7 23.17.11.13.25	Overhead Metal Do	ors	23.17	.11.13.25: Overhead N	letal Doors				
8 23.17.11.23.15	Folding All Glass Do	ors and Grilles	23.17	.11.23.15: Folding All (Glass Doors and Grilles	Ace Architecture	-Drop One	- lass Doors	
10 23.13.39.31	Roof Membranes		23.13	.39.31: Roof Membrar	les		Select an entry:		
11 23.15.11.17	Operable Partitions		23.15	i.11.17: Operable Parti	tions		Select the trade		
13 23.17.19.11.31	Automatic Door Col	ntrols and Operate	ors 23.17	.19.11.31: Automatic I	Door Copy and Operators		assigned to collect asset data.	Automatic Door Controls and Operators	ADA panel/pedestal, only at main entrance doc
14 23.17.21.15	Fire and Smoke Shu	utters and Curtains	23.17	.21.15: Fire and Smok	e of the stand Curtains				
15 23.19.31.19.13.04	Cold Room		23.19	.31.19.13.04: Cold	m				
16 23.19.31.19.13.06	Warm Room		23.19	.31.19.13.0	oom				
19 23.23.11.11	Elevators		23.23	.11evators					
20 23.23.11.11.11.11	Freight Traction Ele	vators	23.0		raction Elevators				
21 23.23.11.11.11.13	Passenger Traction	Elevators	-0.23	.11.11.11.13: Passeng	er Traction Elevators			Traction Elevators	
22 23.23.11.11.11.15	Residential Traction	n Elevators	23.23	.11.11.11.15: Residen	tial Traction Elevators				
23 23.23.11.11 🗸 🔺	В	С	D	E	F G				
24 23.23.11.11 1	Data Authors								
25 23.23.11.11 2	Data Authors							Hydraulic Elevators	
26 23.23.11.11 °		_							
27 23.23.11.11 4	Data Drop and Author	Company name	Name	- Email	- Data Drop Responsibility				
28 23.23.11.11 5	Ace Architecture-Drop One	Ace Architecture	Archy Smith	architect@vueops.com	Drop One				
29 23.23.13.11 ⁰ ₇	Frontline Plumbing-Drop One	Frontline Plumbing	Sally Plum	niechanicaig/deops.com	Drop One				
30 23.23.23.00 8	Palo Alto Electric-Drop One	Palo Alto Electric	Polly Hernandez	electrician@vueops.com	Drop One				
31 23.13.41.39	D10 Specialties-Drop Two	D10 Specialties	Patrick Wang	patrick@vueops.com	Drop Two				
32 23.27.11.04	Openings Specialists-Drop Two XXZ Mechanical-Drop Two	Openings Specialists XXZ Mechanical	Laquanda Thomas Mack Cappon	mechanical@vueops.com	Drop Two Drop Two			Gas Meter	
33 23.27.17.00 12	Frontline Plumbing-Drop Two	Frontline Plumbing	Sally Plum	plumber@vueops.com	Drop Two				Steam condensate pump
34 23.27.17.02 13	Palo Alto Electric-Drop Two	Palo Alto Electric	Polly Electric	electrician@vueops.com	Drop Two				
35 23.27.17.04 15	Frontline Plumbing-Drop Three	Frontline Plumbing	Mack Cannon Sally Plum	nechanicar@vueops.com number@vueops.com	Drop Three				Stormwater drainage pump
36 23.27.17.13 16	Palo Alto Electric-Drop Three	Palo Alto Electric	Polly Electric	electrician@vueops.com	Drop Three			Pumps	
37 23.27.17.35 17									Sanitary sewage pump
38 23.27.21.04	Air Compressors		23.27	.21.04: Air Compresso	rs				
39 23.27.23.00	Heat Exchangers		23.27	.23.00: Heat Exchange	ers			Heat Exchangers	
Readme	UCSD Facility Codes	acility K Project	器 Authors 目	acility Data Specification	🗄 Locations 📄 Documents 🔅	Assets (+)		I 4	

Figure 2.1.9 FDS worksheet showing the connection between the "**Assigned Author**" field and the **Authors** worksheet table (inset).

Create the facility data deliverables schedule



The Project Team Lead should populate the facility data deliverables schedule spreadsheet (Attachment 4), which can be found in the Guidelines companion working documents ("UCSD Deliverables Schedules"). The deliverables schedule is a master list of all facility data submissions including planning deliverables and data drop submissions. Items one through five below should be planned at the start of the project and completed no later than end of design (100% CD or equivalent).

- 1) **Project milestone descriptions** (row 3). Create additional columns if more milestones need to be added.
- 2) **Project milestone dates** (row 4). Enter dates or estimated dates for the completion of design issuances and the start of construction-related milestones.
- 3) **Responsible Party** (column C). Pick from drop-down the responsible data author. To modify the data author list, update the pick-list values in "**Lookup**" worksheet. The list of authors should match the same list in the project-specific FDS.
- 4) **Planned Date** (column varies). Enter the planned date for the submission.
- 5) **Tool** (column D). Enter the tool or platform where the team will submit the deliverable.
- 6) Actual Date (column varies). Enter the actual date the file was submitted after completion.

Names of data authors can be entered generically (e.g., specialties contractor) if company names are not yet known. When buy-out is complete, the Project Team Lead should update data author names in the deliverables schedule and ensure the file is made available to all data authors. If additional rows are required to further break down data drops or to track resubmissions, the Project Team Lead may add rows as needed. If additional columns for more phases or milestones are needed, the Project Team Lead may add columns.

As data drop files are submitted, the Project Team Lead should track submission dates in the **"Actual"** columns. The facility data deliverables schedule should be stored in a location where the University project manager and data manager can always review the most recent version.

	В	C	D	E	F	G	н	1	J	K	L	M	N	0	Р	Q	R	S	Т
3				100	% SD	100	% DD	1009	6 CD	Produc Submittal	t Data s Phase 1	Produ Submitta	ct Data Is Phase 2	Startup	Reports	Commi	ssioning	Substa Compl	antial letion
4				6/15/	/2021	9/15	/2021	12/15	/2021	2/1/2	2022	3/15/	2022	12/5/	/2022	1/15/	2023	3/20/	2023
5	Planned Completion Date	Responsible Party	Tool	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
6	Facility Data Plan	Project Team Lead		*				1/5/2022											
7	Project-Specific FDS	Project Team Lead eBi	uilder					12/6/2021											
8	Facility Data Deliverables Schedule	Project Team Lead Project Team Lead	0.360 Docs core			10/15/2021													
9	Locations Table	Architect Blu	ebeam Studio																
10	Data Drop 1 - *Enter Data Author Here*	*Enter Data Author Here	rOps					12/8/2021	12/7/2021										
11	Data Drop 1 - *Enter Data Author Here*	*Enter Data Author Here																	
12	Data Drop 1 - *Enter Data Author Here*	*Enter Data Author Here*																	
13	Data Drop 2 - *Enter Data Author Here*	*Enter Data Author Here*								1/21/2022									
14	Data Drop 2 *Enter Data Author Here*	*Enter Data Author Here*								1/25/2022									
15	Data Drop 2 - *Enter Data Author Here*	*Enter Data Author Here*								1/25/2022									
16	Data Drop 2 - *Enter Data Author Here*	*Enter Data Author Here*								1/18/2022									
17	Data Drop 2 - *Enter Data Author Here*	*Enter Data Author Here*										3/15/2022							
18	Data Drop 2 - *Enter Data Author Here*	*Enter Data Author Here*										3/15/2022							
19	Data Drop 3 - *Enter Data Author Here*	*Enter Data Author Here*												12/15/2022					
20	Data Drop 3 - *Enter Data Author Here*	*Enter Data Author Here*												12/15/2022					
21	Data Drop 3 - *Enter Data Author Here*	*Enter Data Author Here*												12/15/2022					
22	Data Drop 3 - *Enter Data Author Here*	*Enter Data Author Here*												12/15/2022					
23	Data Drop 4 - Barcode *Enter Data Author Here*	*Enter Data Author Here*														1/25/2023			
24	HDH Maximo Asset Table	*Enter Data Author Here*																3/1/2023	
25	HDH Maximo Location Table	*Enter Data Author Here*																1/5/2023	
26	FM Maximo Asset Table	*Enter Data Author Here*																3/1/2023	
27	FM Maximo Location Table	*Enter Data Author Here*																1/5/2023	

Fig 2.1.10 Facility data deliverables schedule (Attachment 4)

The University data manager will review and approve all milestones deliverables from the Project Team throughout the project according to the planned dates and will notify the data authors if deliverables are satisfactory or need to be revised and resubmitted.

The Project Team must establish meetings and other supporting communication strategies to sufficiently collect and deliver the facility data deliverables as required by this Guideline and the FDS.

h. Project Collaboration and Meetings

In addition to the facility data planning tasks, Project Teams should also hold meetings to review planning and data collection deliverables. The intent of the review meetings is to provide a forum for discussion for more complex questions related to the facility data requirements as they apply to the specific project and to drive accountability within the Team to complete planning tasks according to the schedule. The Project Stage column lists a general timeframe for when the meeting should occur, however, the Team should plan specific dates for these meetings as part of the overall planning effort. The data manager and project team lead should be co-leading the meetings. Data authors relevant to the meeting agenda should also be invited.

MEETING TYPE	GOALS	PROJECT STAGE	FREQUENCY
FDS Planning – Design Phase	 Review project-specific FDS Review any input/questions for facilities 	Construction Documents	Once
FDS Planning – Construction Phase	 Decide responsibility for asset inventory (drop 1) by trade/discipline Review facility data deliverables schedule Decide barcoding responsibility Review any input/questions for facilities 	Preconstruction	Once
Data Deliverable Checks	• Data manager review and clarify any issues with any data drop or locations table for each data author	Design/Construction	Each Data Milestone (if required)
Barcode Planning	 Review scope for assets requiring barcode labels Walk through process, tools, timing, deliverables 	Pre-Commissioning	Once

Table 2.1.11 Facility data planning and collection meetings

2.2 Facility Data Collection

a. Prerequisite tasks

Prior to collecting facility data, the Project Team Lead should guide the data authors through the planning tasks described in **Section 2.1.g**. In addition, the Project Team Lead should ensure data authors and the data manager understand how to access, submit, and review deliverables using the planned tools or platform for submission.

b. Platform for deliverables submission

Facility data deliverables should be collected using a web-based, digital document management or project management system, determined by the Project Team Lead, with input from the data authors and approved by the University project manager. The tool or platform may be in use by the Team for other functions, such as submittal workflow, or general document management. The platform must be capable of tracking file upload/transfer date, version of file, and username associated with the submitted files. The platform must have a method to track status of review or, at minimum, be able to create a folder structure to facilitate a review process. The project team should identify the platform for data deliverables submission in the **facility data deliverables schedule (Attachment 4)**.

c. Roles and Responsibilities

The project team should understand their role and the related roles (Owner, Data Manager, Project Team Lead, and Data Authors) when planning and delivering facility data. Roles are defined in Section 1.3 of this Guideline and the role tasks and responsibilities are discussed throughout Section 2.

d. Data Collection Template

The project team should use the **Data Collection Template** to store and submit location and asset data.

Locations Table

The Template locations table format requires the data author to indicate the following for all functional spaces (rooms) within the facility:

- 1) Name
- 2) Number
- 3) Level (building level the space resides on)
- 4) UCSD Managing department (facilities group with maintenance responsibility)

The data author should work with the University PM and data manager to include any additional rooms where managed assets are located if they are not shown on architectural floorplans, such as exterior equipment yards. All spaces containing managed assets should have location attributes as shown in the numbered list above.

Room numbers (space ID) and Level naming conventions should conform to the requirements specified in the **Attachment 2 – Space ID Guidelines**. The "**Location**" column in the locations table template is

calculated by formula and should equal the concatenation of the space name and number.

For projects involving existing spaces, such as tenant improvement and renovation, only spaces with managed assets need to be entered in the locations table for spaces where the space number (identifier) will remain the same. If space numbers will change, the responsible data author should enter the space in the locations table whether the space contains a managed asset or not.

	A	В	С	D	E	F
1						
2	Locations				2	<u>्</u> र
3					<u> </u>	
4	Location		UCSD managing department	Name	Number	Level
5	Main Dining Room N	M00101A	HDH	Main Dining Room	M00101A	BLDG 5 - LVL 1
6	Main Dining Room N	AO0101B	HDH	Main Dining Room	M00101B	BLDG 5 - LVL 1
7	Kitchen Prep M001	02	FM,HDH	Kitchen Prep	M00102	BLDG 5 - LVL 1
8	Office M00103		HDH	Office	M00103	BLDG 5 - LVL 1
9	Office M00103A		HDH	Office	M00103A	BLDG 5 - LVL 1
10	Changing Room MC	0104	HDH	Changing Room	M00104	BLDG 5 - LVL 1
11	Custodial MO0105		HDH	Custodial	MO0105	BLDG 5 - LVL 1
12	Employee Restroon	n MO0106	HDH	Employee Restroom	M00106	BLDG 5 - LVL 1
13	Restroom Vestibule	MO0107	HDH	Restroom Vestibule	MO0107	BLDG 5 - LVL 1
14	Womens Restroom	M00108	HDH	Womens Restroom	MO0108	BLDG 5 - LVL 1
15	GIRR MO0109		HDH	GIRR	MO0109	BLDG 5 - LVL 1
16	Mens Restroom MC	00110	HDH	Mens Restroom	M00110	BLDG 5 - LVL 1
17	Pre-function Space	Small Lecture Halls M00111	FM	Pre-function Space Small Lecture Halls	M00111	BLDG 5 - LVL 1
18	Sound Lock Corrido	r MO0112	FM	Sound Lock Corridor	M00112	BLDG 5 - LVL 1
19	Small Lecture Hall 1	M00113	FM	Small Lecture Hall 1	M00113	BLDG 5 - LVL 1
20	Projector Booth MC	0113A	FM	Projector Booth	M00113A	BLDG 5 - LVL 1
21	Exit Corridor MO011	3B	FM	Exit Corridor	M00113B	BLDG 5 - LVL 1
22	Sound & Light Lock	M00113C	FM	Sound & Light Lock	M00113C	BLDG 5 - LVL 1
23	Small Lecture Hall 2	MO0114	FM	Small Lecture Hall 2	M00114	BLDG 5 - LVL 1
24	Projector Booth MC	0114A	FM	Projector Booth	M00114A	BLDG 5 - LVL 1
25	Sound & Light Lock	M00114B	FM	Sound & Light Lock	M00114B	BLDG 5 - LVL 1
26	Circulation M00115	-CR	HDH	Circulation	M00115-CR	BLDG 5 - LVL 1
27	Reception MO0116		HDH	Reception	M00116	BLDG 5 - LVL 1
28	Office M00117		HDH	Office	M00117	BLDG 5 - LVL 1
29	Office MO0118		HDH	Office	MO0118	BLDG 5 - LVL 1
30	Project Planning M	00119	HDH	Project Planning	M00119	BLDG 5 - LVL 1
31	Office MO0120		HDH	Office	M00120	BLDG 5 - LVL 1
32	Office M00121		HDH	Office	M00121	BLDG 5 - LVL 1
33	Office M00122		HDH	Office	M00122	BLDG 5 - LVL 1
34	Office M00123		HDH	Office	M00123	BLDG 5 - LVL 1
25	Office MO0124	Decility Codes Duilding & D	relation and the second second second			

Figure 2.2.1 Example locations table format within the Data Collection Template.

Assets Table

The Template asset table format requires the data author to indicate the asset data for each managed asset as defined in the University FDS and discussed in Section 2.1. The asset table format does not associate attributes to data drops. It is the responsibility of the project team and data authors to plan which attributes will be collected and delivered at specified data drops. In the graphic below, for convenience, the University has highlighted in red the attributes typically submitted at **drop one**, in purple the attributes typically submitted at **drop two**, and in green the attributes typically submitted in **drop three**.

🙎 Tra	ide		🛞 Type			S Facility maintena	0	C Location				Installed	asset		
ta author (email) 😱	Company name	Asset category project name	Manufacturer 🗸	Model	Type tag	UCSD managing department	Level	Location	Area serving	👃 Sequential or tag numb	UCSD tag	Serial number	Barcode FM	Barcode MC	Barcor
chitect@vueops.com	Ace Architecture	Automatic Door Controls and Operators	Stanley	MAGIC-FORCE		FM	BLDG 5 - LVL 1	Pre-function Space Small			ADO-X501004A				
chitect@vueops.com	Ace Architecture	Automatic Door Controls and Operators	Stanley	MAGIC-FORCE		FM	BLDG 5 - LVL 1	Pre-function Space Small			ADO-X501004H-1				
chitect@vueops.com	Ace Architecture	Automatic Door Controls and Operators	stanley	MAGIC-FORCE		FM	BLDG 5 - LVL 1	Pre-function Space Small			ADO-X501004H-2				
chitect@vueops.com	Ace Architecture	Drinking Fountain With Coolers	Ekay	LZSTLG8WSLK		HDH	BLDG 5 - LVL 1	Main Dining Room			DF-5-1-1				
chitect@vueops.com	Ace Architecture	Drinking Fountain With Coolers	lkay	LZSTLG8WSLK		HDH	BLDG 5 - LVL 1	Restroom Vestibule			DF-5-1-2				
chitect@vueops.com	Ace Architecture	Drinking Fountain With Coolers	Ekay	LZSTLG8WSLK		HDH	BLDG 5 - LVL 2	Open Art Studio M00207			DF-5-1-3				
chitect@wueops.com	Ace Architecture	Drinking Fountain With Coolers	lkay	LZSTLG8WSLK		HDH	BLDG 5 - LVL 2	Men M00221			DF-5-1-4				
chitect@vueops.com	Ace Architecture	Drinking Fountain With Coolers	Ekay	LZSTLG8WSLK		HDH	BLDG 5 - LVL B1	Circulation MOB120-CR			DF-5-1-5				
chitect@vueops.com	Ace Architecture	Fire Extinguishers	Activar	Cosmic 10E		FM	BLDG 5 - LVL 1	Pre-function Space Small			FEC-101				
chitect@vueops.com	Ace Architecture	Fire Extinguishers	Activar	Cosmic 10E		FM	BLDG 5 - LVL 1	Sound Lock Corridor			FEC-102				
chitect/gvueops.com	Ace Architecture	Fire Extinguishers	Activar	Cosmic 10E		FM	BLDG 5 - LVL 1	Pre-function Space Small			FEC-103				
cnitect@vueops.com	Ace Architecture	Hydraulic Elevators	Mitsubishi Electric	IDH-C-H1		HDH	BLDG 5 - LVL B1	Elevator 5-C MOELV5-C			ELEVATOR 5-C				
intect/gwueops.com	Ace Architecture	Hydraulic Elevators	Mitsubishi Electric	IDH-C-H1		нон	BLDG 5-LVL B1	Elevator 5-D MOELV5-D			ELEVATOR 5-D				
chitect/givueops.com	Ace Architecture	Hydraulic Elevators	Mitsubishi Electric	IDH-M-L2		HDH	BLDG 5 - LVL B1	Elevator 5-E MOELV5-E			ELEVATOR 5-E				
chitect@vueops.com	Ace Architecture	Laboratory Fume Hoods	By Owner Vendor	211N L48 SMR 5000LM FS 277 35K 80CRI WH WGZ48		HDH	BLDG 5 - LVL 2	Jewelry M00209			FH-01				
chitect@vueops.com	Ace Architecture	Metal Doors	Commercial Door Manufacturing	HMMA 861		FM	BLDG 5 - LVL 1	Pre-function Space Small			X501004A				
chitect@vueops.com	Ace Architecture	Metal Doors	Commercial Door Manufacturing	HMMA 861		FM	BLDG 5 - LVL 1	Pre-function Space Small			X501004B				
chitect@vueops.com	Ace Architecture	Metal Doors	Commercial Door Manufacturing	HMMA 861		FM	BLDG 5 - LVL 1	Pre-function Space Small			X501004G				
chitect@vueops.com	Ace Architecture	Metal Doors	Commercial Door Manufacturing	HMMA 861		FM	BLDG 5 - LVL 1	Pre-function Space Small			X501004H				
chitect@vueops.com	Ace Architecture	Traction Elevators	Mitsubishi Electric			HDH	BLDG 5-LVL B1	Elevator 5-A MOELV5-A			ELEVATOR 5-A				
chitect@vueops.com	Ace Architecture	Traction Elevators	Mitsubishi Electric			HDH	BLDG 5-LVL B1	Elevator 5-B MOELV5-B			ELEVATOR 5-8				

Figure 2.2.2 Example assets table format within the Data Collection Template.

e. Data Collection Progression – Data Drops and Final Submission

Project team lead with data authors defined in the **Facility Data Deliverables Schedule** should determine the full schedule of data drops and responsible data authors. After each drop is submitted, the data manager will review and comment, if required, on any errors, omissions, or other revisions needed. Data authors are expected to review data manager markups and revise and resubmit data drop tables as needed.

The Project Team Lead is accountable for ensuring all data authors submit their respective asset table deliverables and any resubmissions by data authors to address corrections or clarifications requested by the data manager.

After a data deliverable has been approved by the data manager, the Project Team Lead should ensure the approved file is made available to subsequent data authors for the same scope of assets to use as a starting point for the subsequent data drop. At the end of the project, the Project Team Lead should compile and consolidate all approved data from each author and data drop into one assets table deliverable per facility for review and approval by the Data Manager.

Change Management

If attribute data in submitted and approved data drops change as a result of design or construction changes, the last data author submitting a data drop deliverable for the impacted assets is expected to revise and resubmit the asset table to reflect the change. The data author may wait to batch submit the revised deliverable file if many changes are expected that impact multiple assets within their scope.

Data authors should be attuned to and have a plan for handling the following scenarios that potentially change facility data deliverables:

- 1) Design changes that affect spaces (locations)
- 2) Design changes or substitutions that affect product data (manufacturer, model)
- 3) Design changes that add or remove managed assets
- 4) Assets change location (space) after trade models have been signed off for coordination

Barcoding

Asset categories requiring barcode labels are identified in the University FDS.

The project team may decide to assign full responsibility of all barcode labeling and collection of barcode numbers to multiple data authors or to an individual project team member, such as the commissioning agent. The project team lead should plan the process and tools necessary to efficiently track barcode label numbers in the field and to associate them with their related managed assets. The project team member performing barcode labeling ("**barcoder**") will position labels on assets in a manner that the barcode is visible and accessible to a facility engineer performing maintenance on the asset in the final facility condition.

It is recommended that the barcoder use a mobile device with barcode scanning capability to ensure accuracy of data entered from the field into the asset table. It is also highly recommended for the barcoder to maintain digital photo documentation of the barcode labels application to assets. The data manager and University project manager will facilitate obtaining barcode labels from the facilities group(s) having maintenance responsibility.

f. Data Translation and Delivery to Facilities

The Data Manager is responsible for translating asset and location data from the consolidated asset tables in the Data Collection Template format into the required CMMS file formats for each of the facilities groups.

g. Data Collection - Data Quality

Data authors should ensure that facility data submitted in asset and location tables comply with formatting requirements as described in **Section 2.1.f – Facility Data Source and Formatting Requirements**. Data authors should ensure that no typos exist in attribute values in their facility data deliverables and repetitious attribute values such as "Manufacturer" and "Level" have the same case and spelling across multiple assets and locations that share values.

At each facility data deliverable milestone, according to the facility data deliverables schedule, the data manager will conduct facility data quality checks. The University will maintain facility data quality checking procedures, both manual and automated, and may require the project team to make use of software tools or add-ins to conduct periodic checking of data to be delivered to the University over the course of the project. The University will provide feedback to the project team if revisions and resubmissions to the facility data deliverables are needed based on the outcome of data quality checks.

4. Definitions

А

As-Built Documents

As-Built Documents are the collection of paper drawings or electronic drawings that typically reside in the contractor's onsite trailer that contain mark-ups, annotations, and comments about changes that have been made to the contract documents during the construction phase.

С

CMMS (Computerized Maintenance Management System)

A software that centralizes maintenance information and facilitates the processes of maintenance operations. It helps optimize the utilization and availability of physical equipment like machinery, communications, plant infrastructures, and other assets. CMMS have a database and a data model that organizes information about the assets a maintenance organization is charged with maintaining, as well as the equipment, materials, and other resources to do so.

D

Design Team

The Design Team is the Architect and all the consultants that provide design services for a project. These design services can be rendered at any time during the project.

DWG

DWG is the native AutoCAD[®] file format. It is a widely used file format for exchanging drawing information and 3D information to different programs. While not a database file type, it still has many uses for exchanging information.

F

Facility Data Manager

Project team member responsible for collecting and submitting facility data for their firm's scope as required by the University Facility Data Specification.

Facility Data Specification (FDS)

Document describing the University information requirements for managed assets. Lists the attributes required to be submitted according to asset class by the project team on capital projects.

L

Lifecycle management systems (LCM)

Suite of software applications and tools that make up the University's management suite for facilities maintenance and operations including CMMS (Computerized Maintenance and Management System), space management, GIS, among others.

М

(IBM) Maximo[®]

A web-based computerized maintenance management system (CMMS) and enterprise asset management solution. Maximo[®] provides inventory and asset management, predictive and preventive maintenance, analytic reporting, and work order management in one application suite. Maximo[®] is the CMMS used by Housing, Dining, and Hospitality, Campus FM, and the Med Center at UC San Diego.

Ν

No-fly Zones

No-fly Zones are areas identified in the BIM with semi-transparent massing rectangles that represent zones necessary for maintenance and repair of equipment, access to valves, access above and below ceiling/wall access panels, access in front of electrical panels, etc.

R

Record Drawing

The production of Record Drawings is the capturing of the As-Built Document's annotation, comments, and mark-ups in a drawing format only. This does not typically include the updating of any models.

S

Shop Drawing(s)

Shop Drawings are produced from the coordinated models of each trade and include all dimension and labeling. Submitted for approval by the Project team. These drawings are then used in the field for fabrication and erection.

Т

ТМА

TMA or webTMA is a computerized maintenance management system used to manage campus physical assets and streamline operations for facility services. TMA allows users to setup and manage facilities, buildings, technicians, and vehicles. Users can produce schedules, book facilities and assets, assign dates for repairs and maintenance, and perform inventory checks. TMA is one of the CMMS' in use by the UC San Diego Medical Center.

(IBM) Tririga

An integrated workplace management solution (IWMS) developed by IBM. Enables users to perform space planning and optimization functions and allows occupants to make service requests and book rooms.

Attachment 3 – University Facility Data Specification (FDS) and Data Collection Template

Includes the following files with noted worksheets:

UCSD FDS and Data Collection Template v2.01.xlsx

- Readme
- Facility Data Specification
- Authors
- Locations
- Assets

FDS and Data Collection Template Guidelines

UC San Diego



The Data Collection Template is be used to provide facility data from design and construction projects. The Template is the primary method project teams should use to submit facility data required according to the Facility Data Specification (FDS). Each project team, represented by the Project Team Lead, should plan and agree upon the required facility data, how, and when it will be submitted with the University PM and Data Manager. Each project team should develop a facility data deliverables schedule with review by the data manager. The deliverables schedule will lay out the timing of when completed Templates are due by each data author. See the T2O/BIM Guidelines for more details on facility data deliverables.

The process of developing project data using the Template is organized in three sections:

(1) The "UCSD Facility Codes" table needs to be filled out by the data manager with the facilities group(s) involved in the project as the first step. The values entered in the UCSD Facility Codes table must be entered exactly since they directly transfer into Maximo. The "Facility" and "Project" tables capture general information after that.

(a) The "Facility Data Specification" and "Authors" tables require data be entered before data collection can begin. The "Custom project values for data entry" section of the "Facility Data Specification" needs to be completed by the Project Team with approval by the Data Manager before the next steps of inputting project data. The Project Team Lead should review the project design and list all "Asset category project name" values next to the appropriate Omniclass row to indicate that the asset category is found in the project. "Assigned authors" with the data drop they are responsible for are pulled into the Facility Data Specification sheet from the "Authors" sheet. Project team lead should ensure the "Authors" table is filled in with the Company Name, Data author name, Author email, and Data Drop so the author can be assigned to their respective asset categories in the FDS sheet.
(3) Data Collection: The "Locations" table must be populated with all of the space (room) names, numbers, levels, and the FM department that manages them ("UCSD Managing Department"). Populating the locations table is ideally performed at the end of the design process when space names and numbers have been fixed. The "Assets" table references multiple data fields input from the previous steps which is why it is important to complete sections (1) and (2) before proceeding with adding data in the "Assets" table. The "location" attribute in the "assets" table also pulls from the list of locations in the "Locations" table, if they are present. If all steps are followed in sequence, the "Assets" table serves as an effective support tool for Teams to interpret the UCSD facility data requirements.

For additional instructions, refer to the "Notes" next to the tables on each worksheet and the following field descriptions for additional details. Do not leave the attribute blank on the form, as this will indicate an omission of information.

Assets worksheet data entry information. If there is no value for an attribute that is required, then use "NA" to denote "not applicable".

Assets Table Field name (Not in Table below) Description

 Data author (email)
 Choose your email from the dropdown list. To enter additional rows, copy-paste into the next available row or right-click on the table and choose "Add row".

 Company name
 Calculated value based on data author picking a value in "Data author (email)" field.

 Notes
 Describe any unique conditions or exceptions.

			Additional Note
Attribute Name	Data Type	Attribute Description and Data Source	
UCSD Managing Department	SD Managing partment Picklist HDH, FM, MC, or a combination of the three. FM group at the University having maintenance responsibility. See FDS for differing data requirements for each department.		The 'UCSD Required By' field in the 'Facility Data Specification' worksheet indicates if the managing department tracks the asset category for any 'UCSD managing department' assignment in the 'Locations' worksheet indicates which FM department will manage the space, which
Facility ("UCSD HDH Description" or "UCSD FM Description")	Text (Fixed)	Facility name. Decided by UC San Diego. Same value for all assets within each facility. These attributes are entered on the "UCSD Facility Codes" worksheet.	may inform asset maintenance responsibility.
Asset Category Project Name	Picklist	Term used to refer to asset or equipment type from project design documents (drawings, equipment schedules, or specifications). Entered in the FDS worksheet which links to the dropdown on the Assets sheet.	Dropdown values are filtered by "Company Name"
UCSD Tag	Text (Unique)	Unique asset identifier value as defined on design docs. If no unique tag is assigned, data manager to prescribe a pattern for data authors to implement, incorporating type tag.	
Туре Тад	Text	Non-unique asset identifier defined on design docs for assets of the same type (e.g. light fixtures, fire extinguishers). Only required if "UCSD Tag" is not defined by design team.	
Location	Picklist	From architectural floor plans. Value may either be a Level or the concatenation of space "Name Number" from locations table.	
Manufacturer	Text	Manufacturer company name from approved product data submittals.	
Model	Text	Model number for the product from approved product data submittals.	
Serial	Text	Asset serial number from startup reports or physical placards. A unique identifier for an installed product generated by the product manufacturer. Extended attribute (not required for all assets).	
Barcode (**)	Number	Barcode number matching HDH, FM, or Med Center barcode label values. Extended attribute (not required for all assets).	Add department-specific barcode if the cell is non-shaded.
Area Serving	Text	From single-line, riser diagram, or design plans. Location or list of locations (level or space "Name Number" from locations table) that the asset provides its service to, for mechanical dry-side assets only. Extended attribute (not required for all assets).	

Table 2.1.6 Asset data type and source.

** is a placeholder for either FM, MC, or HDH

Table 2.1.6 from T2O/BIM Guidelines main document

Facility Data Specification Version 2.01

		Classification				🗯 Cu	istom project values for data entry			
System	Product class	OmniClass number	OmniClass name	LOD Matrix	Assigned Author	Asset category project name	Notes	UCSD required by	Unique	Area serving
B20 EXTERIOR VERTICAL ENCLOSURES	23-17 11 00: Doors	23.17.11.00	Doors	23.17.11.00: Doors			Main entrance doors only, not all exterior doors	FM,MC	V	-
B20 EXTERIOR VERTICAL ENCLOSURES	23-17 11 00: Doors	23.17.11.13.25	Overhead Metal Doors	23.17.11.13.25: Overhead Metal Doors				FM,MC	Z	-
B20 EXTERIOR VERTICAL ENCLOSURES B30 EXTERIOR HORIZONTAL ENCLOSURES	23-17 11 00: Doors 23-13 39 00: Roof Coverings, Claddings, Linings	23.17.11.23.15	Roof Coverings, Claddings, Linings	23.17.11.23.15: Folding All Glass Doors and Grilles 23.13.39.00: Roof Coverings, Claddings, Linings				MC	-	-
B30 EXTERIOR HORIZONTAL ENCLOSURES	23-13 39 00: Roof Coverings, Claddings, Linings	23.13.39.31	Roof Membranes	23.13.39.31: Roof Membranes				FM,HDH	-	-
C10 INTERIOR CONSTRUCTION	23-17 11 00: Doors	23.15.11.17	Operable Partitions	23.15.11.17: Operable Partitions				FM		-
C10 INTERIOR CONSTRUCTION	23-17 19 00: Hardware for Openings	23.17.19.11.31	Automatic Door Controls and Operators	23.17.19.11.31: Automatic Door Controls and Operators			ADA panel/pedestal, only at main entrance doors	FM,MC	×.	-
C10 INTERIOR CONSTRUCTION	23-17 21 00: Protection of Openings	23.17.21.15	Fire and Smoke Shutters and Curtains	23.17.21.15: Fire and Smoke Shutters and Curtains				FM	Ø	-
C10 INTERIOR CONSTRUCTION	23-19 31 00: Room Units 23-19 31 00: Room Units	23.19.31.19.13.04	Cold Room Warm Room	23.19.31.19.13.04: Cold Room 23.19.31.19.13.06: Warm Room				FM,HDH FM	2 Z	-
C10 INTERIOR CONSTRUCTION	23-21 19 00: Casework	23.21.19.15.15.11	Hospital Specialty Casework	23.21.19.15.15.11: Hospital Specialty Casework				HDH	2	-
C20 INTERIOR FINISHES	23-15 19 00: Ceiling Coverings, Claddings, and Linings	23.15.19.15.11	Ceiling Tiles	23.15.19.15.11: Ceiling Tiles				MC	•	-
D10 Conveying D10 Conveying	23-23 11 00: Vertical Transportation Equipment 23-23 11 00: Vertical Transportation Equipment	23.23.11.11	Freight Traction Elevators	23.23.11.11: Elevators 23.23.11.11.11.11: Freight Traction Elevators				AII FM.HDH	2	-
D10 Conveying	23-23 11 00: Vertical Transportation Equipment	23.23.11.11.11.13	Passenger Traction Elevators	23.23.11.11.11.13: Passenger Traction Elevators				FM,HDH	Ø	-
D10 Conveying	23-23 11 00: Vertical Transportation Equipment	23.23.11.11.11.15	Residential Traction Elevators	23.23.11.11.11.15: Residential Traction Elevators				FM,HDH	2	-
D10 Conveying	23-23 11 00: Vertical Transportation Equipment	23.23.11.11.13.11	Freight Hydraulic Elevators	23.23.11.11.13.11: Freight Hydraulic Elevators				FM,HDH	×.	-
D10 Conveying	23-23 11 00: Vertical Transportation Equipment	23.23.11.11.13.13	Passenger Hydraulic Elevators	23.23.11.11.13.13: Passenger Hydraulic Elevators				FM,HDH		-
D10 Conveying D10 Conveying	23-23 11 00: Vertical Transportation Equipment	23.23.11.11.13.15	Residential Hydraulic Elevators	23.23.11.11.13.15: Residential Hydraulic Elevators				FM,HDH FM HDH	2	-
D10 Conveying	23-23 11 00: Vertical Transportation Equipment	23.23.11.11.21	Elevator Equipment and Controls	23.23.11.11.21: Elevator Equipment and Controls				FM,HDH	×.	-
D10 Conveying	23-23 13 00: Lifting Equipment	23.23.13.11.25	Wheel Chair Lifts	23.23.13.11.25: Wheel Chair Lifts				FM		-
D20 Plumbing	23-23 23 00. Loading Dock Equipment 23-13 41 00: Roof Specialties and Accessories	23.13.41.39	Roof Drains	23.13.41.39: Roof Drains				FM	¥.	-
D20 Plumbing	23-13 41 00: Roof Specialties and Accessories	23.13.41.39	Roof Drains	23.13.41.39: Roof Drains				FM		-
D20 Plumbing D20 Plumbing	23-27 11 00: Gas Instrument and Controls 23-27 17 00: Pumps	23.27.11.04	Gas Meters Pumps	23.27.11.04: Gas Meters 23.27.17.00: Pumps			Duplex Pumps	FM All	2	-
D20 Plumbing	23-27 17 00: Pumps	23.27.17.02	Vacuum Pumps	23.27.17.02: Vacuum Pumps			bapiex i diripo	FM,MC	¥.	-
D20 Plumbing	23-27 17 00: Pumps	23.27.17.04	Drainage Pumps	23.27.17.04: Drainage Pumps				All	Ø	-
D20 Plumbing	23-27 17 00: Pumps	23.27.17.35	Sewage Ejectors	23.27.17.13. Genunugar Pumps 23.27.17.35: Sewage Ejectors				All	¥.	-
D20 Plumbing	23-27 21 00: Compressors	23.27.21.04	Air Compressors	23.27.21.04: Air Compressors				All	Ø	
D20 Plumbing	23-27 23 00: Heat Exchangers	23.27.23.00	Heat Exchangers	23.27.23.00: Heat Exchangers				All All	2	-
D20 Plumbing	23-27 23 00: Heat Exchangers	23.27.23.15	Shell and Tube Heat Exchangers	23.27.23.15: Shell and Tube Heat Exchangers				All	Z	-
D20 Plumbing	23-27 27 00: Pressure Reducing Stations	23.27.27.00	Pressure Reducing Stations	23.27.27.00: Pressure Reducing Stations			Descharg	MC	Z	-
D20 Plumbing D20 Plumbing	23-27 29 00: Tanks and Storage Structures	23.27.29.19	Tanks Gas System Tank	23.27.29.19: Tanks 23.27.29.19.02: Gas System Tank			Receiver Lank	FM,HDH FM	2	-
D20 Plumbing	23-27 29 00: Tanks and Storage Structures	23.27.29.19.04	Gray Water Tanks	23.27.29.19.04: Gray Water Tanks				FM,HDH	2	-
D20 Plumbing	23-27 29 00: Tanks and Storage Structures	23.27.29.19.05	Potable-Water Storage Tanks	23.27.29.19.05: Potable-Water Storage Tanks			Storage Tank	All		-
D20 Plumbing	23-27 29 00: Tanks and Storage Structures	23.27.29.19.08	Expansion Tanks (plumbing)	23.27.29.19.08: Expansion Tanks (plumbing)			Expansion Tank	All	2	-
D20 Plumbing	23-27 31 00: Valves	23.27.31.00	Valves	23.27.31.00: Valves				FM,MC	Ø	-
D20 Plumbing	23-27 31 00: Valves	23.27.31.00	Valves	23.27.31.00: Valves				FM,MC	2	-
D20 Plumbing	23-27 31 00: Valves	23.27.31.11	Backflow Preventors	23.27.31.11: Backflow Preventors				All	¥.	-
D20 Plumbing	23-27 31 00: Valves	23.27.31.29	Mixing Valves	23.27.31.29: Mixing Valves				FM,MC	Ø	-
D20 Plumbing D20 Plumbing	23-27 33 00: Valve Actuators 23-27 37 00: Liquid Traps	23.27.33.11	Electrical Valve Actuators Grease Traps	23.27.33.11: Electrical Valve Actuators 23.27.37.11: Grease Traps				MC	₹ Z	-
D20 Plumbing	23-27 37 00: Liquid Traps	23.27.37.15	Steam Traps	23.27.37.15: Steam Traps				MC	Ø	-
D20 Plumbing D20 Plumbing	23-27 55 00: Liquid Treatment Components	23.27.55.11	Liquid Filters Water Softeners	23.27.55.11: Liquid Filters				MC EM MC		-
D20 Plumbing	23-27 55 00: Liquid Treatment Components	23.27.55.38	Liquid Separators (plumbing)	23.27.55.38: Liquid Separators (plumbing)			Air Separators	FM	2	-
D20 Plumbing	23-29 37 00: Occupational Safety and Health Equipment	23.29.37.13	Emergency Eye Wash Stations	23.29.37.13: Emergency Eye Wash Stations				All	Ø	-
D20 Plumbing D20 Plumbing	23-29 37 00: Occupational Safety and Health Equipment	23.29.37.15	Emergency Showers Combination Eve Wash Emergency Showers	23.29.37.15: Emergency Showers 23.29.37.16: Combination Eve Wash Emergency Showers				All	2	-
D20 Plumbing	23-31 11 00: Faucets	23.31.11.00	Faucets	23.31.11.00: Faucets				MC	Z	-
D20 Plumbing	23-31 19 00: Toilets	23.31.19.00	Toilets	23.31.19.00: Toilets				MC		-
D20 Plumbing	23-31 29 00: Hot Water Heaters	23.31.29.00	Hot Water Heaters	23.31.29.00: Hot Water Heaters			Tanks Heaters, Instantaneous hot water heaters	All	×.	-
D20 Plumbing	23-31 29 00: Hot Water Heaters	23.31.29.02	Water Heater Booster	23.31.29.02: Water Heater Booster				HDH		-
D20 Plumbing D20 Plumbing	23-31 31 00: Drinking Fountains 23-33 47 00: Air Drivers	23.31.31.00 23.33.47.00	Drinking Fountains Air Drivers	23.31.31.00: Drinking Fountains 23.33.47.00: Air Dryers				All EM MC	2	-
D20 Plumbing	23-39 29 00: Waste Water Collection and Removal	23.39.29.11.13	Waste Water Storm Drain	23.39.29.11.13: Waste Water Storm Drain				FM,HDH	¥.	-
D20 Plumbing	23-39 29 13: Waste Water Subdrainage	23.39.29.13.19	Surface Water Drainage Systems	23.39.29.13.19: Surface Water Drainage Systems				FM,HDH		-
D20 Plumbing	23-39 33 00: Water and Waste Water Preliminary Treatment Equipment	23.39.33.17	Oil and Grease Separation and Removal Equipm	ent 23.39.33.17: Oil and Grease Separation and Removal Equipment				FM	Ξ.	-
D20 Plumbing	23-39 41 00: Water and Wastewater Advanced Treatment Equipment	23.39.41.13	Demineralization Equipment	23.39.41.13: Demineralization Equipment			Reverse Osmosis skid	FM	-	-
D30 HVAC	23-27 11 00: Gas Instrument and Controls 23-27 11 00: Gas Instrument and Controls	23.27.11.15 23.27.11.27	Gas Instrument and Controls	23.27.11.15: Flow Measuring Instrument and Controls 23.27.11.27: Gas Instrument and Controls			Flow Measuring Instrument and Controls Oxvgen Monitor	HDH.MC	₩ 1	-
D30 HVAC	23-27 17 00: Pumps	23.27.17.00	Pumps	23.27.17.00: Pumps				All	2	-
D30 HVAC	23-27 17 00: Pumps	23.27.17.13	Centrifugal Pumps	23.27.17.13: Centrifugal Pumps				All	2	-
D30 HVAC	23-27 23 00: Heat Exchangers	23.27.23.00	Heat Exchangers	23.27.23.00: Heat Exchangers				All	×.	-
D30 HVAC	23-27 23 00: Heat Exchangers	23.27.23.13	Plate and Frame Heat Exchangers	23.27.23.13: Plate and Frame Heat Exchangers				All	Z	-
D30 HVAC	23-27 29 00: Tanks and Storage Structures 23-27 29 00: Tanks and Storage Structures	23.27.29.19	Expansion tanks (hvac)	23.27.29.19: Tariks 23.27.29.19.07: Expansion tanks (hvac)				All	¥.	-
D30 HVAC	23-27 31 00: Valves	23.27.31.00	Valves	23.27.31.00: Valves				FM,MC		-
D30 HVAC	23-27 31 00: Valves 23-27 33 00: Valve Actuators	23.27.31.00	Valves Electrical Valve Actuators	23.27.31.00: Valves 23.27.33.11: Electrical Valve Actuators				FM,MC FM	2 X	-
D30 HVAC	23-27 55 00: Liquid Treatment Components	23.27.55.31	Liquid Chemical Feeders	23.27.55.31: Liquid Chemical Feeders				FM,MC	×.	-
D30 HVAC	23-27 55 00: Liquid Treatment Components	23.27.55.36	Liquid Separators (hvac)	23.27.55.36: Liquid Separators (hvac)				FM	Ø	-
D30 HVAC	23-27 57 00: Gas Treatment Components	23.27.57.31	Electronic Air Cleaners	23.27.57.31: Electronic Air Cleaners				FM	¥.	-
D30 HVAC	23-33 11 00: Commercial Boilers	23.33.11.00	Commercial Boilers	23.33.11.00: Commercial Boilers				All	Ø	-
D30 HVAC	23-33 11 00: Commercial Boilers	23.33.11.13	Condensing Boilers	23.33.11.13: Condensing Boilers				All	2	-
D30 HVAC	23-33 11 00: Commercial Boilers	23.33.11.21	Water Tube Boilers	23.33.11.21: Water Tube Boilers				All	Z	-
D30 HVAC	23-33 11 00: Commercial Boilers	23.33.11.22	Electric Boilers	23.33.11.22: Electric Boilers			Pacaboard/radiant besters	All	V	-
D30 HVAC	23-33 15 00: HVAC Heating Units 23-33 17 00: Heat Pumps	23.33.15.21	Split System Heat Pumps	23.33.17.13: Split System Heat Pumps			Dasebuard/radiant neaters	All	-	-
D30 HVAC	23-33 21 00: Chillers	23.33.21.13	Chillers	23.33.21.13: Chillers				All	Z	-
D30 HVAC	23-33 21 00: Chillers 23-33 21 00: Chillers	23.33.21.13.11	Central Package Unit Chillers	23.33.21.13.11: Central Package Unit Chillers				All All	2	-
D30 HVAC	23-33 21 00: Chillers	23.33.21.13.15	Reciprocating Chillers	23.33.21.13.15: Reciprocating Chillers				All	æ. Ø	-
D30 HVAC	23-33 21 00: Chillers	23.33.21.13.17	Rotary Chillers	23.33.21.13.17: Rotary Chillers				All	Z	
D30 HVAC	23-33 21 00: Chillers	23.33.21.13.19 23.33.21.13.21	Screw Chillers	23.33.21.13.19: Kotary Screw Chillers 23.33.21.13.21: Screw Chillers				All	⊻ Z	-
D30 HVAC	23-33 21 00: Chillers	23.33.21.13.23	Scroll Chillers	23.33.21.13.23: Scroll Chillers				All	Z	-
D30 HVAC	23-33 23 00: Cooling Towers	23.33.23.11	Mechanical Draft Cooling Towers	23.33.23.11: Mechanical Draft Cooling Towers				FM,MC	2	-
D30 HVAC	23-33 25 00: Air Handling Units	23.33.25.00	Air Handling Units	23.33.25.00: Air Handling Units				All	×.	-
D30 HVAC	23-33 27 00: Air Humidity Control Equipment	23.33.27.13	Dehumidifiers	23.33.27.13: Dehumidifiers				FM	Z	Ø
D30 HVAC	23-33 27 00: Air Humidity Control Equipment 23-33 29 00: HVAC Dampers	23.33.27.15 23.33.29.19	Dampers	23.33.29.19: Dampers				FM,MC FM,HDH	¥.	-
Soo IIVAO										

4	Fytended Att	ributes	
Serial	Barcode FM	Barcode MC	Barcode HDH
-	-		-
-	-	☑ ☑	-
-	-	V	-
-			-
-	-		-
-	-	-	-
-			-
-		-	-
-	-	V	
-			₩.
-	-		2
-	-	-	
-			2
-	-	-	-
-			-
-	-	-	-
Z	2	2	
¥.	☑	S.	-
Z			
¥.	V	×.	
⊠ ⊠			
V	V	2	
-	-	-	-
Z		-	-
Z		2	± √
2	V	-	
-	-		-
-			-
-	-		
-		-	
-			
-	-		-
-	-	-	-
Z			
	-	2	
-	-	⊠ ⊠	-
-	-		-
-	-	-	
-	-	☑ ☑	-
-	-	-	
-			
-	-	-	-
-	-	-	-
-	-		2
Z	V	2	
V	V	-	2
Ø		2	
-		×.	-
-	-	-	-
V		-	-
-	-	-	-
2 Z	V	2 Z	
Z			
V	V	2	2
-	-	-	•
¥.	V	⊾ Z	
Z			
Z			
V		2 1	
Z			
¥.	V	I I I I I I I I I I I I I I I I I I I	-
	⊠ Z	2	-
-	-	-	-
:	-		-
-	-	-	-

Notes Assign values in Asset type project name, and UCSD tag format with facility owner Asset type project name: duplicates are highlighted UCSD required by departments: HDH, FM, MC

gory found in LOD Matrix table gory covered by higher level category

		Classification				Custom project values for data entry			K Extended Attributes	:S
System	Product class	OmniClass number	OmniClass name	LOD Matrix	Assigned Author Asset category proje	ect name Notes	UCSD required by Unio	que Area serving Serial	Barcode FM Barco	ode MC Barcode HDH
D30 HVAC	23-33 29 00: HVAC Dampers	23.33.29.24	Combination Fire Smoke Dampers	23.33.29.24: Combination Fire Smoke Dampers		Fire Dampers	FM 🖬	Z	-	
D30 HVAC	23-33 29 00: HVAC Dampers	23.33.29.25	Smoke Dampers	23.33.29.25: Smoke Dampers			FM 🖬	Z	-	· · ·
D30 HVAC	23-33 29 00: HVAC Dampers	23.33.29.37	Volume Control Dampers	23.33.29.37: Volume Control Dampers			FM,HDH	Z		- 🛛
D30 HVAC	23-33 31 00: Air Circulators	23.33.31.15	Exhaust Hoods Fans	23.33.31.15: Exhaust Hoods			All R	2 E - 7 7 7	-	- V
D30 HVAC	23-33 31 00: Air Circulators	23.33.31.19	Fans	23.33.31.19: Fans		Exhaust Fan	All	Z Z Z		
D30 HVAC	23-33 31 00: Air Circulators	23.33.31.19	Fans	23.33.31.19: Fans		Supply Fan	All			
D30 HVAC	23-33 31 00: Air Circulators	23.33.31.19	Fans	23.33.31.19: Fans		Booster Fan	All			
D30 HVAC	23-33 31 00: All Circulators 23-33 33 00: HVAC Fan Coil Units	23.33.31.19	Fans Fan Coil Units	23.33.31.19: Fans		Return Fan		N N N N		
D30 HVAC	23-33 35 00: HVAC Coils	23.33.35.00	HVAC Coils	23.33.35.00: HVAC Coils		Reheat coils	FM,HDH R	Z	-	- 🛛
D30 HVAC	23-33 37 00: Refrigerant Condensing Units	23.33.37.00	Refrigerant Condensing Units	23.33.37.00: Refrigerant Condensing Units			FM,HDH	Z - Z		-
D30 HVAC	23-33 39 00: Air Conditioning Equipment	23.33.39.11	Air Conditioners	23.33.39.11: Air Conditioners			All	2 - 2		
D30 HVAC	23-33 39 00: Air Conditioning Equipment	23.33.39.15	Make Up Air Units Packaged Air Conditioners	23.33.39.15: Make Up Air Units 23.33.39.17: Packaged Air Conditioners			EM HDH	7 12 12 7 12 12		- V
D30 HVAC	23-33 39 00: Air Conditioning Equipment	23.33.39.19	Packaged Terminal Air Conditioning Units	23.33.39.19: Packaged Terminal Air Conditioning Units			FM.HDH R			- 2
D30 HVAC	23-33 39 00: Air Conditioning Equipment	23.33.39.21	Split System Air Conditioning Units	23.33.39.21: Split System Air Conditioning Units			All	Z - Z		
D30 HVAC	23-33 41 00: HVAC Air Terminals	23.33.41.17.11	Constant Volume Air Terminal Units	23.33.41.17.11: Constant Volume Air Terminal Units			All	2 2 -		
D30 HVAC	23-33 41 UU: HVAC Air Terminals 23-33 43 00: HVAC Condenser Units	23.33.41.17.13	Air Cooled Condenser Units	23.33.41.17.13: Variable Air Volume Terminal Units 23.33.43.11: Air Cooled Condenser Units				<u> </u>		
D30 HVAC	23-33 43 00: HVAC Condenser Units	23.33.43.13	Evaporative Condenser Units	23.33.43.13: Evaporative Condenser Units			All	2		
D30 HVAC	23-33 43 00: HVAC Condenser Units	23.33.43.15	Refrigeration Condenser Units	23.33.43.15: Refrigeration Condenser Units			All	Z	-	
D30 HVAC	23-33 43 00: HVAC Condenser Units	23.33.43.17	Water Cooled Condenser Units	23.33.43.17: Water Cooled Condenser Units			All	Z		<u>v</u>
	23-33 49 27: Ventilators 23-35 17 00: Variable Speed Drives	23.33.49.27.11	Gravity ventilators	23.33.49.27.11: Gravity Ventilators			EMMC E	7 - 17		
D30 HVAC	23-39 35 00: Water and Wastewater Chemical Feed Equipment	23.39.35.11.17.04	Fuel-Gas Detection and Alarm	23.39.35.11.17.04: Fuel-Gas Detection and Alarm			FM,HDH		-	- 🛛
D40 Fire Protection	23-27 17 00: Pumps	23.27.17.06	Fire Pumps	23.27.17.06: Fire Pumps			FM,HDH R	Z - Z		-
D40 Fire Protection	23-29 25 00: Fire Fighting Equipment	23.29.25.15.19	Fire Hose Connectors	23.29.25.15.19: Fire Hose Connectors			FM	2	-	<u> </u>
D40 Fire Protection	23-29 25 00: Fire Fighting Equipment	23.29.25.19	Fire Extinguishers	23.29.25.19: Fire Extinguishers			FM,MC	<u> </u>		
D40 Fire Protection	23-29 31 00: Fire Notification Appliances	23.29.31.13	Fire Alarm Control Panels	23.29.31.13: Fire Alarm Control Panels			All	Z		2 Z
D40 Fire Protection	23-29 33 00: Fire Suppression System Components	23.29.33.13.13	Carbon Dioxide Suppression Equipment	23.29.33.13.13: Carbon Dioxide Suppression Equipment			FM E	Z		
D50 Electrical	23-27 15 00: Building Automation and Control	23.27.15.21	Building Lighting Controls	23.27.15.21: Building Lighting Controls			FM 💀	2	-	
D50 Electrical	23-35 11 00: Electrical Generators	23.35.11.00	Electrical Generators	23.35.11.00: Electrical Generators			All	a - 2		
D50 Electrical	23-35 11 00. Electrical Generators	23.35.11.15	Photovoltaic Collectors	23.35.11.17.15: Photovoltaic Collectors		One asset per array	FM.HDH	⊔ - 12 Z	-	- V
D50 Electrical	23-35 13 00: Transformers	23.35.13.04	Low Voltage Transformers	23.35.13.04: Low Voltage Transformers			All	Z	-	
D50 Electrical	23-35 13 00: Transformers	23.35.13.06	Medium Voltage Transformers	23.35.13.06: Medium Voltage Transformers			All	Z	-	
D50 Electrical	23-35 13 00: Transformers	23.35.13.08	Substation Transformers	23.35.13.08: Substation Transformers			All	2		
D50 Electrical	23-35 17 00: Variable Speed Drives	23.35.17.15	Variable Frequency Drives	23.35.17.15: Variable Frequency Drives			EM HDH	<u> </u>		- 2
D50 Electrical	23-35 19 00: Batteries	23.35.19.11	Battery Racks	23.35.19.00. Battery Racks			FM,HDH R	2		- 2
D50 Electrical	23-35 23 00: Power Conditioning Equipment	23.35.23.21	Uninterrupted Power Supply (UPS) Units	23.35.23.21: Uninterrupted Power Supply (UPS) Units			All	Z	-	
D50 Electrical	23-35 25 00: Electrical Instrumentation and Controls	23.35.25.11	Electrical Meters	23.35.25.11: Electrical Meters		Electric meters	FM,HDH	Z	-	-
D50 Electrical	23-35 27 00: Electrical Terminals	23.35.27.11	Electrical Receptacles	23.35.27.11: Electrical Receptacles			MC -		-	
D50 Electrical	23-35 29 00. Clicuit Bleakers	23.35.31.13	Distribution Panel Boards	23.35.29.21. Vacuum Circuit Dieakers			All	2 7 - 17		
D50 Electrical	23-35 31 00: Electrical Power Distribution Devices	23.35.31.17	Electrical Panel Boards	23.35.31.17: Electrical Panel Boards			All	Z		
D50 Electrical	23-35 31 00: Electrical Power Distribution Devices	23.35.31.23	Motor Control Centers	23.35.31.23: Motor Control Centers			All	Z	- (
D50 Electrical	23-35 31 00: Electrical Power Distribution Devices	23.35.31.29	Switchboards	23.35.31.29: Switchboards			FM,HDH	Z - Z		<u> </u>
D50 Electrical	23-35 31 00: Electrical Power Distribution Devices	23.35.31.29.02	Substation Switchboards Switchgear	23.35.31.29.02: Substation Switchboards				⊿ - ⊻		
D50 Electrical	23-35 37 00: Electrical Switches	23.35.37.11	Automatic Transfer Switches	23.35.37.11: Automatic Transfer Switches			All	Z	-	
D50 Electrical	23-35 43 00: Electrical Relays	23.35.43.37	Voltage Relays	23.35.43.37: Voltage Relays			MC R	Z	-	- 2
D50 Electrical	23-35 47 00: Electrical Lighting	23.35.47.11.04	Task Lighting	23.35.47.11.04: Task Lighting			MC R	2	-	-
D50 Electrical	23-35 47 13: Emergency Lighting	23.35.47.13	Emergency Lighting	23.35.47.13: Emergency Lighting			FM,MC	2	-	
DS0 Electrical D80 Integrated Automation	23-35 47 15: Exit filuminated Signs 23-27 15 00: Building Automation and Control	23.35.47.15 23.27.15.23	Exit illuminated Signs HVAC Controls	23.35.47.15: Exit illuminated Signs			FM,MC FM	<u> </u>		
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.11	Commercial Food Services Cabinets	23.21.21.11: Commercial Food Services Cabinets			HDH	Z	-	-
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.11.11	Commercial Hot Cabinets	23.21.21.11.11: Commercial Hot Cabinets			HDH 🖬	Z	-	-
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.13.15	Commercial Broilers	23.21.21.13.15: Commercial Broilers			HDH R	2	-	- 2
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.13.15.15	Commercial Rice Cookers	23.21.21.13.15.15: Commercial Gas Brollers			HDH R	<u> </u>		- 2
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.13.21.11	Commercial Deep Fryers	23.21.21.13.21.11: Commercial Deep Fryers			HDH	Z	-	- 🗹
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.13.25	Commercial Griddles	23.21.21.13.25: Commercial Griddles			HDH 🖬	Z	-	-
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.13.27	Commercial Grills	23.21.21.13.27: Commercial Grills			HDH R	2	-	- 🗹
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.13.29	Commercial Kettles	23.21.21.13.29: Commercial Kettles				<u> </u>		- 1
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.13.31	Commercial Combination Convection Ovens	23.21.21.13.31.13: Commercial Combination Convection Ovens			HDH R	Z		- 2
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.13.31.15	Commercial Convection Ovens	23.21.21.13.31.15: Commercial Convection Ovens			HDH 🖬	Z	-	-
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.13.35	Commercial Ranges	23.21.21.13.35: Commercial Ranges			HDH 😨	2	-	- 🗹
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.13.39	Commercial Food Steamers	23.21.21.13.39: Commercial Food Steamers			HDH R	<u> </u>		- 🗹
E10 Equipment	23-21 21 00, Food Service Equipment and Furnishings 23-21 21 00; Food Service Equipment and Furnishings	23.21.21.13.41.11	Commercial Toaster Conveyors	23.21.21.13.41.11. Commercial Trit Skillets 23.21.21.13.45.11: Commercial Toaster Conveyors			HDH R	u Z		- M
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.15.13	Commercial Food Warmer Stations	23.21.21.15.13: Commercial Food Warmer Stations			HDH	Z	-	- 🗹
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.15.17	Commercial Steam Tables	23.21.21.15.17: Commercial Steam Tables			HDH R	Z	-	- 🗹
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.17.11	Commercial Retrigerated Tables	23.21.21.17.11: Commercial Refrigerated Tables			HDH E	<u> </u>		- 🛛
E10 Equipment	23-21-21-00, Food Service Equipment and Furnishings	23.21.21.19	Commercial Dishwashers	23.21.21.19. Commercial Distiwasher Equipment			HDH 10	2		- 17
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.21	Commercial Food Disposal Equipment	23.21.21.21: Commercial Food Disposal Equipment			HDH	Z	-	-
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.21.13	Commercial Garbage Disposals	23.21.21.21.13: Commercial Garbage Disposals			HDH 😡	Z	-	- 🗹
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.21.15	Commercial Garbage Pulpers	23.21.21.21.15: Commercial Garbage Pulpers			HDH R	2		- 2
E10 Equipment	23-21 21 00, Food Service Equipment and Furnishings 23-21 21 00; Food Service Equipment and Furnishings	23.21.21.23.11	Commercial Freezer Food Display Coolers	23.21.21.23.11. Commercial Freezer Food Display Ceses			HDH G	u 7		- M
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.23.11.15	Commercial Refrigerated Food Display Cases	23.21.21.23.11.15: Commercial Refrigerated Food Display Cases			HDH R			- 🛛
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.25.45	Commercial Milk Dispensers	23.21.21.25.45: Commercial Milk Dispensers			HDH 💀	Z	-	- 🛛
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.27.13.23	Commercial Upright Freezers	23.21.21.27.13.23: Commercial Upright Freezers			HDH,MC	2		
EIU Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.27.15.23	Commercial Upright Reach In Refrigerators	23.21.21.27.15.23: Commercial Upright Reach In Refrigerators				<u> </u>		
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.29	Commercial Ice Machines	23.21.21.29: Commercial Ice Machines			HDH,MC R	 Z		
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.29.13	Commercial Cube Ice Makers	23.21.21.29.13: Commercial Cube Ice Makers			HDH,MC	Z		
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.31	Commercial Food Preparation Equipment	23.21.21.31: Commercial Food Preparation Equipment			HDH 💀	2	-	-
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.31.11	Commercial Food Mixers	23.21.21.31.11: Commercial Food Mixers			HDH R	۵ ۲		- 🗹
E10 Equipment	23-21 21 00, Food Service Equipment and Furnishings 23-21 21 00; Food Service Equipment and Furnishings	23.21.21.31.13	Commercial Refrigerated Food Preparation Tabl	23.21.21.31.13. Commercial Food Peelers 23.21.21.31.21.11: Commercial Refriderated Food Prenaration Table	es		HDH R	u Z		- <u>M</u>
E10 Equipment	23-21 21 00: Food Service Equipment and Furnishings	23.21.21.35.11.13	Commercial Salad Bars	23.21.21.35.11.13: Commercial Salad Bars			HDH	Z	-	- 🛛
E10 Equipment	23-21 23 00: Residential Furniture and Equipment	23.21.23.33.13.11	Residential Upright Refrigerators	23.21.23.33.13.11: Residential Upright Refrigerators			HDH 💀	Z	-	- 🛛
E10 Equipment	23-25 31 00: Hematology Products	23.25.31.11.11.13	Blood Freezers	23.25.31.11.11.13: Blood Freezers			MC E	2	- (-
ETO Equipment	23-25 33 00: Medical Gas Products	23.25.33.11	Medical Air Pressure Control Cabinets	23.25.33.11: Medical Air Pressure Control Cabinets			MC R	u 7		
E10 Equipment	23-25 33 00: Medical Gas Products	23.25.33.25	Medical Gas Outlets	23.25.33.25: Medical Gas Outlets			MC R	 Z		
E10 Equipment	23-25 33 00: Medical Gas Products	23.25.33.33	Medical Gas Valve Boxes	23.25.33.33: Medical Gas Valve Boxes			MC	Z		Ø -
E10 Equipment	23-25 57 00: Sterilization Medical Products	23.25.57.11.31	Steam Autoclaves	23.25.57.11.31: Steam Autoclaves			MC E	2	-	-
E10 Equipment	23-25 69 00: Laboratory and Scientific Products 23-25 65 00: Biological Protection and Processition Products	23.25.65.11	Biological Safety Cabinets	23.25.65.11: Biological Safety Cabinets			FM,MC	<u> </u>		
E10 Equipment	23-25 69 00: Laboratory and Scientific Products	23.25.69 11 15	Laboratory Fume Hoods	23.25.69.11.15: Laboratory Fume Hoods			FM.MC	2		<u> </u>
E10 Equipment	23-27 59 00: Recycling Equipment	23.27.59.15.19	Trash Compactors	23.27.59.15.19: Trash Compactors			FM,MC	Z		-
G30 Site Civil/Mechanical Utilities	23-27 31 00: Valves	23.27.31.11	Backflow Preventors	23.27.31.11: Backflow Preventors			All	Z	-	
G30 Site Civil/Mechanical Utilities	23-27 31 00: Valves	23.27.31.43	Post Indicator Valves	23.27.31.43: Post Indicator Valves			FM E	Z		
GGG Site Givil/ Mechanical Utilities	23-39 29 13. Waste water Subdrainage	23.39.29.13.19	Surrace water Drainage Systems	23.37.27.13.19. Surrace water Drainage Systems						- 12

Data Authors

Data Drop and Author	Company name	Name	Email	Data Drop Responsibility
Architectural-Drop One Mechanical-Drop One	Architectural Mechanical	First Last Architect First Last Mechanical	architect@vueops.com mechanical@vueops.com	Drop One Drop One
Plumbing-Drop One Electrical-Drop One	Plumbing Electrical	First Last Plumber First Last Electrician	plumber@vueops.com electrician@vueops.com	Drop One Drop One
Civil-Drop One	Civil	First Last Civil	civil@vueops.com	Drop One

ocation	UCSD managing department	Name	Number	Level
Room Name 0123A	FM,HDH	Room Name	0123A	Level 1

Notes Location: name + number, duplicates are highlighted Locations are sorted by level and number Number: duplicates are highlighted UCSD managing departments: HDH, FM, MC

Check that there are no duplicate Location values. Remove any duplicates to prevent issues downstream in Assets. Sort the Location list by Level and Number before using in Assets

Assets																
	🖀 Trade		👁 Type			🔦 Facility maintenance			Location			Installed	asset			
Data author (email)	Company name	Asset type project name	Manufacturer	Model	Type tag	UCSD managing department	Level	Location		Area serving	Sequential or tag number UCSD tag	Serial number	Barcode FM	Barcode MC	Barcode HDH	Notes
mechanical@vueops.co	om Mechanical-Drop One															
nlumber@vueons.com	Plumbing-Drop One															
planbengvaeops.com																
electrician@vueops.cor	m Electrical-Drop One															
civil@vueops.com	Civil-Drop One															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	0															
	U															
	U															
	U															
	U															
	U															
	U															
	U															
	0															
	U															
	U															
	U															
	U															
	U															
	U															
	U															
	U															
	U															
	0															
	U															
	0															
	0															
	U															
	U															

Document
Product data source document

Notes UCSD managing departments: HDH, FM, MC. Data author to determine with University asset responsibility for maintenance.

Attachment 4 – Deliverables Schedules

Includes the following files with noted worksheets:

UCSD Deliverables Schedules.xlsx

• Facility Data Deliverables Schedule

Project:_____

											T				1		Colorent 1		
				1009	6 SD	100	100% DD		100% CD		Product Data Submittals Phase 1		Product Data Submittals Phase "N"		, Startup Reports		Commissioning		antial detion
				1/1/2030		1/1/2030		1/1/	2030	1/1/2030		1/1/2030		1/1/2030		1/1/2030		1/1/2030	
Delete This Column After Completion	Deliverable Description	Responsible Party	Tool	Planned Actual		Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
	Project-Specific FDS	Project Team Lead																	
	Facility Data Deliverables Schedule	Project Team Lead																	
	Locations Table	Architect																	
	Data Drop 1 Inventory - Architect	Architect																	
	Data Drop 1 Inventory - Mechanical Trade Partner	Mechanical Trade Partner																	
	Data Drop 1 Inventory - Plumbing Trade Partner	Plumbing Trade Partner																	
	Data Drop 1 Inventory - Electrical Trade Partner	Electrical Trade Partner																	
	Data Drop 1 Inventory - Curtain Wall and Glazing Trade	Curtain Wall and Glazing Trade																	
	Data Drop 1 Inventory - Plumbing Trade Partner	Plumbing Trade Partner																	
	Data Drop 2 Product - Electrical Trade Partner	Electrical Trade Partner																	
Delete row if not needed	Data Drop 2 Product - Curtain Wall and Glazing Trade	Curtain Wall and Glazing Trade																	
Delete row if not needed	Data Drop 2 Product - *Enter Data Author Here*	*Enter Data Author Here*																	
Delete row if not needed	Data Drop 2 Product - *Enter Data Author Here*	*Enter Data Author Here*																	
Delete row if not needed	Data Drop 2 Product - *Enter Data Author Here*	*Enter Data Author Here*																	
Delete row if not needed	Data Drop 2 Product - *Enter Data Author Here*	*Enter Data Author Here*																	
	Data Drop 3 Serial - *Enter Data Author Here*	*Enter Data Author Here*																	
Delete row if not needed	Data Drop 3 Serial - *Enter Data Author Here*	*Enter Data Author Here*																	
Delete row if not needed	Data Drop 3 Serial - *Enter Data Author Here*	*Enter Data Author Here*																	
Delete row if not needed	Data Drop 3 Serial - *Enter Data Author Here*	*Enter Data Author Here*																	
Delete row if not needed	Data Drop 4 Barcode - *Enter Data Author Here*	*Enter Data Author Here*																	
Delete row if not needed	HDH Maximo Asset Table	*Enter Data Author Here*																	
Delete row if not needed	HDH Maximo Location Table	*Enter Data Author Here*																	
Delete row if not needed	FM Maximo Asset Table	*Enter Data Author Here*																	
Delete row if not needed	FM Maximo Location Table	*Enter Data Author Here*																	
Delete row if not needed	MC CMMS Asset Table	*Enter Data Author Here*																	
Delete row if not needed	MC CMMS Location Table	*Enter Data Author Here*	-	1	_					1	-								