### INTRODUCING

Conspectus Loud:

Booking

# Specifications

Ditch Contracting Experiments Make the process transparent. Collaborate!

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A Publication of



#### Introduction

Chapter 1 Rethinking Specifications, Refocusing Priorities

Chapter 2 A New Approach to Project Specifications

Chapter 3 Conspectus Cloud In Action

Chapter 4 Benefits for Each Project Team Member

Chapter 5 <u>A Powerful Tool for the Construction</u> Industry

About the Thought Leader

**Bonus: Features of Conspectus Cloud** 

### Non-graphic information is trapped in legacy solutions

Introduction

More precisely, the industry lacks an appropriate and meaningful way to manage and integrate the vast amounts of non-graphic information (specifications) as a value proposition for *all* participants throughout the entire projects process, from inception through commissioning and building operations maintenance.

The importance of specifications has long been under appreciated, and the value inherent in specifications to reduce risk and control the ultimate cost for the owner has remained untapped. Specifications are the key document for establishing quality and are a contractual design deliverable. So managing specifications is crucial for everything from documenting design decisions to ensuring budget compliance and stripping hidden risk from the project as a whole.

Owners, contractors, sub-contractors, estimators, insurers, and product manufacturers depend on specifications to deliver a project efficiently. New approaches to improve the process must encourage timely decisions in an appropriate order while exposing relevant information to allow all participants to contribute their expertise and knowledge to create optimum solution.

Conspectus, Inc., a specification consultancy, has developed Conspectus Cloud, a new tool and approach that provides success for projects, and most especially, owners.



### CHAPTER ONE

Rethinking Specifications, Refocusing Priorities

## **Ditch Contracting Experiments**

The industry is changing. Today's reliance on delegated design, and design assist requires cooperation between the design team and the construction team. And commissioning requires cooperation with the owner to establish Owners Project Requirement and validate design conformance. But legacy systems and processes don't encourage or support collaborative, integrated information development.

Regardless, construction owners want results meeting their expectations. Owners have experimented with every available contracting method to improve collaboration and results. No method produces consistent improvements. The experiments continue. Contracts cannot force collaboration to improve results. Transparency can.

Transparency promotes honest communication and produces trustworthy information. Teams can trust information when the source is known so the quality can be verified. When information is trusted, parties can act, making decisions with confidence. Openly sharing information, even when the information is uncomfortable, removes risk created by hidden activities. Most importantly, transparency builds interpersonal trust, an essential component of collaboration.

Specifications are the solution. They are required as a contract document. Accurate specifications are critical to construct the project. That hasn't changed, but specifications *can* change to unlock their true potential. Integrated specifications embodying all the project requirements—OPR, performance criteria, and design criteria— can enable continuous design and cost validation and serve the life of the project from inception through commissioning and building operations.

Think broadly. Specifications encompass owner's project requirements, performance criteria, design criteria, system descriptions — far more than a construction project manual. System descriptions, as specifications, can describe design solutions sufficiently for comparative analysis and optimization before committing extensive design resources to any one solution. Once decided, spend design time documenting only the optimum solution. As construction draws to a close, deliver a complete project record to owners with all the information needed for commissioning and operations.

Spend design time documenting only the optimum solution.



### CHAPTER TWO

# A New Approach to Project Specifications

## **Open Design's Black Box**

Conspectus found the way. Open design's black box and allow the entire team — owners, designers, estimators, contractors, and suppliers — to see the specifications process and contribute their ideas, knowledge, and expertise. Share information, discuss options, optimize decisions, record the entire process and the results. Enable the owner's informed consent for critical decisions at every step along the way. Progressively build reliable information consistent with the owner's objectives. Keep the process moving always forward, avoiding wasteful value engineering and redesign.



A Tool to Open the Box - Conspectus Cloud merges the OPR with two types of specifications documents, UNIFORMAT and MasterFormat<sup>®</sup>, in a single platform. The platform permits simultaneous, coordinated development of integrated information as project specifications to explore options and select the best solution in respect to both performance and value.

#### UNIFORMAT

UNIFORMAT (UF) is an elemental classification system developed by estimators for comparative cost analysis of building systems and assemblies. The basic elements include substructure, shell, interiors, services, equipment and furnishings, and site work. The list of elements serves as a fundamental checklist so nothing is forgotten.

UniFormat is additive - say what you know when you know it. One of UF's key advantages is that performance and design criteria can be documented as the OPR before the system is designed. The criteria then can be used as the project progresses to test the design and construction for compliance with the owner's project requirements. If non-compliant, the design, the criteria, or both can be evaluated and adjusted to satisfy the owner before proceeding, which prevents execution of an unacceptable solution.

Describing facilities by UF systems and assemblies permits owners and designers to compare different systems by design, performance, and cost rather than cost alone. This approach allows for informed design decisions within the constraints of the OPR and the project budget.

#### MasterFormat

MasterFormat (MF) is the traditional classification system used to accurately describe what the contractor must build. MF specifications document the contractor's work for materials and products, not the systems and assemblies.

MF specifications describe technical product, installation, and quality requirements for individual building components. MF is reductive (starting with a master and deleting what does not apply). When the facility is completed, the MF specifications have little value because products the contractor installs may not be what was specified and individual products have little connection to the OPR.

### **Conspectus Cloud Project Workflow**





### CHAPTER THREE

## Conspectus Cloud In Action

## Let's Start with OPR & UF

UF element descriptions are concise statements about each required system and assembly. They identify the makeup, define the required quality, and permit an estimator to determine the cost of each assembly. The UF specifications allow the entire project team to quickly and easily comprehend the design response to the OPR.

INTR	ODUCTION (LEVEL 1) OWNERS PROJECT REQUIREMENTS
10	PROJECT CONTROLS (LEVEL 2)
1010	PROJECT SUMMARY (LEVEL 3)
1020	PROJECT PROGRAM (LEVEL 3)
1030	PROJECT CRITERIA (LEVEL 3)
1040	EXISTING CONDITIONS (LEVEL 3)
1050	OWNER'S WORK (LEVEL 3)
1090	FUNDING (LEVEL 3)
20	OWNER DEVELOPMENT (LEVEL 2)
2010	SITE ACQUISITION (LEVEL 3)
2020	PERMITS (LEVEL 3)
2030	PROFESSIONAL SERVICES (LEVEL 3)
2050	OTHER ACTIVITIES (LEVEL 3)
2080	BUDGET PROJECT CONTINGENCIES (LEVEL 3)
2090	BUDGET FINANCING (LEVEL 3)
30	PROCUREMENT REQUIREMENTS (LEVEL 2)
3010	PROJECT DELIVERY (LEVEL 3)
3020	SOLICITATION (LEVEL 3)
3030	INSTRUCTIONS FOR PROCUREMENT (LEVEL 3)
3040	AVAILABLE PROJECT INFORMATION (LEVEL 3)
3050	PROCUREMENT FORMS AND SUPPLEMENTS (LEVEL 3)
40	CONTRACTING REQUIREMENTS (LEVEL 2)
4010	CONTRACTING FORMS AND SUPPLEMENTS (LEVEL 3)
4020	PROJECT FORMS (LEVEL 3)
4030	CONDITIONS OF THE CONTRACT (LEVEL 3)
4040	REVISIONS, CLARIFICATIONS, AND MODIFICATIONS (LEVEL 3)

Conspectus Cloud leverages the UF Introduction (on page 12) and Levels 2 and 3 elements to document the OPR. Much of the OPR, such as environmental and minimum zoning and code criteria, can be generated as soon as the approximate site is known. The owner may enhance the minimum regulatory requirements since they only establish the minimum acceptable building that can be constructed, legally. Any enhancements desired beyond the minimum must be documented to ensure the design team understands the owner is establishing a higher standard than the codes require.

The required building elements are selected for the project from the UF checklist. Conspectus Cloud uses standard UF organization for the Level 1–Level 3 titles. It allows for both standard and custom Level 4 numbers and titles to allow alignment with BIM assembly numbers and titles. For example, when a particular project includes three exterior wall assemblies numbered EW-1, EW-2, and EW-3 in BIM, the UF Level 4 custom number can use the same identification for each assembly.

**C C** The required building elements are selected for the project from the UF checklist

## **Breaking it down further**

The subheadings below Level 4 are standardized to ensure consistent element descriptions throughout the UF documentation. The basic content of each subheading is described below and is followed by a more specific example showing how the concepts are implemented.

#### **UF Level 4 Element Organization and Content**

В	SHEL	L (LEVEL 1)	
B10	SUPER	STRUCTURE (LEVEL 2)	
B20	EXTER	IOR ENCLOSURE (LEVEL 2)	
B2010	EXTERIO	DR WALLS (LEVEL 3)	
B2010.0	CustNum	STANDARD OR CUSTOM TITLE (LEV	/EL 4)
		Description	What the contractor must build
		Basis of Design	Required products and systems
		Performance Requirements	Structural, life-safety, thermal, acoustic and other criteria usually determined by calculation and testing to confirm compliance
		Design Requirements	Aesthetic, physical, and qualitative design requirements usually determined by observation to confirm compliance.
		References	Overall performance or design requirement references
		Components	List of materials and products comprising the Level 4 element
MF Nun	nber	Keynote Term	Material and product generic names used on drawings and in MF specifications. Link to MF specification by MF number
		Alternatives	Optional elements or components under consideration
		History	List of design decisions affecting Level 4 element
		Date	Date, description, and rationale for design decision

#### **UF Level 4 Element Example**

B2010.EW-1       EXTERIOR WALL - GUEST ROOM TOWER FLOORS (LEVEL 4)         Description       Articulated plaster and wall tile cladding over weather barrier, wall sheathing and insulated framed structural backup.         Basis of Design       Plaster         Plaster       Super Plaster; Ultrawall, fine finish         Performance Requirements       -40 psf, uniform load at corners -25 psf, uniform load at corners -25 psf, uniform load at field         Thermal Resistance       U-0.05, maximum         Design Requirements       8 inches maximum         References       PCA Stucco Manual         093000       Wall Tile       Porcelain tile, thin set on plaster base with cement grout         092400       Plaster       Galvanized steel, self-furring         072726       Weather Barrier       Fluid applied, permeable         061600       Wall Sheathing       Fire retardant treated veneer plywood, 5/8 inch thick         072100       Insulation       Unfaced mineral fiber blankets         061000       Wall Framing       Fire retardant treated lumber         Maternatives       Ladding       EIFS in lieu of plaster and wall tile         1       Cladding       EIFS in lieu or plaster and wall tile	B2010 EXTERI	OR WALLS (LEVEL	3)		
Description       Articulated plaster and wall tile cladding over weather barrier, wall sheathing and insulated framed structural backup.         Basis of Design       Basis of Design         Plaster       Super Plaster; Ultrawall, fine finish         Performance Requirements       -40 psf, uniform load at corners -25 psf, uniform load at field         Vind Load       -40 psf, uniform load at field         -25 psf, uniform load at field       -25 psf, uniform load at field         Thermal Resistance       U-0.05, maximum         Design Requirements       8 inches maximum         Thickness       8 inches maximum         References       PCA Stucco Manual         093000       Wall Tile       Porcelain tile, thin set on plaster base with cement grout         092400       Lath       Galvanized steel, self-furring         092400       Lath       Galvanized steel, self-furring         072726       Weather Barrier       Fire retardant treated veneer plywood, 5/8 inch thick         072100       Insulation       Unfaced mineral fiber blankets         061000       Wall Framing       Fire retardant treated lumber         Cladding       EIFS in lieu of plaster and wall tile         History       2018-03-28       Plaster and wall tile cladding selected by owner for <td>B2010.EW-1</td> <td colspan="4">EXTERIOR WALL - GUEST ROOM TOWER FLOORS (LEVEL 4)</td>	B2010.EW-1	EXTERIOR WALL - GUEST ROOM TOWER FLOORS (LEVEL 4)			
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appearance and durability.		2018-03	3-28	Plaster and wall tile cladding selected by owner for appearance and durability.	

## **Breaking it down further**

#### For Construction and Beyond: Incorporating MF

The UF system description is linked to the MF construction specification via the system components. When the components are known, the keyword term is linked via the MF Number to the MF specification section where the component will be specified. Completing the link automatically adds the MF specification as a project document. The keyword term is also automatically added to the MF specification as a principal product that must be included in the MF specification.

For example, the UF element shown above automatically generates the following MF specification section and inserts the required principal products and the work results the contractor must complete to minimize potential information gaps between the UF specification and the MF specification.

SECTION 092400 CEMENT PLASTERING					
PART 1 GENERAL					
1.1 SUMMARY	,				
A.	<ul> <li>Work Results:</li> <li>1. Articulated plaster cladding over weather barrier, wall sheathing and framed structural backup at guest room tower exterior walls.</li> </ul>				
В.	Principal Products: 1. Plaster. 2. Lath.				

#### **MF Specification Created by UF Data**

## Putting It All Together: Integrated Building Information

Conspectus Cloud produces Integrated Building Information (IBI). The tool permits integration of OPR and UF and MF specifications, in a single location in a single platform. The information is available in total or in part, specific to users' project roles. Say what you know, when you know it. Continuously build the data as information is learned. Update the data and record decisions as they are made. Enable continuous estimating to ensure the project remains on budget.

Architects can view the OPR to ensure the design problem is understood as UF is created. The owner can view the UF system descriptions to verify the designers responded correctly to the OPR. Estimators can quickly assess the UF systems and components that must be priced to help guide design decisions. Construction managers can view the MF specifications to understand the products needed to schedule the work and build the UF systems. All participants can see all the data at any point in time to understand the relationship of the individual parts to the entire project.



### CHAPTER FOUR

## Benefits for Each Project Team Member

### **Owner Benefits**

**Owner Requirements Defined:** The owner can build in project requirements from the beginning, including proprietary design and construction standards. This proactive approach provides the basis for judging if the design solution effectively meets all project requirements.

**Transparent Process, Owner Focus:** The specification process is no longer hidden from the owner. Active participation is promoted so decisions can be governed by owner requirements and influenced by owner preferences rather than controlled by the design team.

**Informed Consent:** The process allows for informed consent and enables the owner to formally evaluate and adjust the OPR—and the design solution—when unexpected conditions or opportunities are discovered during the design process.

**Design Validation:** Integrating OPR, UF, and MF documents in a single location enables the design solution to be easily validated against the OPR and the budget to minimize redesign and project delays.

**Risk Management:** Active participation by the entire team reduces uncertainty and hidden risk during bidding and construction, evidenced by reduced numbers of requests for information (RFIs), construction claims, and change orders. Many constructability, logistical, and coordination concerns can be discovered and resolved before the documents are released for use.

### **Architect Benefits**

**Clearly Established Brief:** As design begins, the architect can rely on the consistently structured OPR documentation establishing the parameters for the design problem the architect must solve. The architect can respond by developing system and assembly descriptions following a consistent format. The format enables the architect to easily record system attributes that are essential for cost analysis and validating that the design complies with the OPR.

**Flexibility to Explore Solutions:** During early design stages a variety of solutions can be explored to determine the most appropriate for the project—resulting in the owner's informed consent, recorded as part of the process.

**Preservation of Design Intent:** Following the owner's informed consent, the architect can have confidence that the decisions and resulting design will be preserved rather than subjected to value engineering.

**Design Consultant Management:** The architect is able to manage specification production for all design consultants. The development process is transparent and consultants can't hide insufficient progress toward meeting scheduled milestone deliverables. Required specification coordination happens in real time because information is exposed to all participants.

**Coordination of Drawings and Specifications:** The design team can request specification modifications as the drawings are developed to ensure proper coordination.

## **Specifier Benefits**

**Effective Communication Across the Project Team:** Specifiers can communicate with the entire project team, asking questions directly to those most able to accurately respond. Contractual issues can go to the owner, aesthetic issues to the architect, and engineering issues to the appropriate engineer. Discussions are tracked with the relevant specification text so the team can monitor the development and the specification revisions as the design progresses.

**Task Automation:** Conspectus Cloud enables specifiers to automate selected tasks, especially tedious, routine tasks that are often prone to human error. Automation improves overall document quality and coordination among the hundreds of documents required to describe the project.

**Document Repurposing:** Custom tags allow specifiers to use a single set of documents for multiple purposes, and to apply a specific purpose to an entire project or a single document.

**BIM Coordination:** BIM objects (Revit families) can be linked by a single data entry to the UF systems and assemblies in Conspectus Cloud. Simply ensure the Revit assembly code matches the UF element number. This allows for easy comparison to ensure all modeled objects are described in UF and all UF elements are included in the BIM.

## **Estimator Benefits**

Quicker, More Accurate Estimates: Conspectus Cloud allows estimators to perform cost analyses more quickly. UF serves as the underlying format for both project documentation and project estimates, especially during the early design stages. Using the same organization scheme promotes coordination between the project description and estimate, allowing for easy confirmation that the estimate accurately reflects the scope of the project description.

Assembly Comparison: When the UF documentation describes an entire assembly and the UF-based estimate prices that entire assembly, comparing assemblies that perform the same function is vastly simplified. The UF description also allows the added dimension of comparing the system performance in addition to cost, permitting a more informed decision when choosing one assembly over another as the path the design should take.

**Powerful Cost Analysis:** System descriptions permit historic comparison more easily. The cost of basic building elements for a particular building type is expected to be within a particular range of the overall building cost. When the range is exceeded, the system triggers an analysis to ensure both the design and the cost are accurately reflecting the design progress, and to determine what may be causing the overrun. Ongoing cost analysis can have a positive project impact on both cost and schedule by using market trends and labor availability to inform design decisions.

### **Construction Manager Benefits**

**Resources and Scheduling Aligned to Building Elements:** One of the most difficult project tasks is managing logistics and monitoring schedule production to complete the building construction. UF systems lend themselves as the basis for crew assignments. Each UF system can be subdivided by floor, quadrant, and any number of other factors, to create a production scope within the optimal management timeframe, helping manage production rate and providing feedback for process improvements.

Active Participation in Specification Development: The construction team knows the perils of the construction site and can offer insight into specification choices that may have significant schedule, sequence, or coordination impact. Conspectus Cloud allows contractors, their subcontractors, and material suppliers to actively participate in the specification development. They can lend the experience to avoid predictable pitfalls before they are discovered during construction.

**Smoother Construction Process, Reduced Risk:** When the construction team participates more fully, ambiguity can be eliminated. The need for RFIs and change orders and the resulting schedule disruptions will be vastly reduced. Construction team participation exposes the inherent, often hidden, risks and construction contingencies associated with today's project delivery models and allows those risks to be removed or properly managed to minimize the impact.



### **CHAPTER FIVE**

A Powerful Tool For the Construction Industry

### **Conspectus Cloud**

#### Harness the Power

Create transparency with patent pending Conspectus Cloud, a webbased tool that promotes this new project approach. Conspectus Cloud integrates all specifications in a single platform making all information available to the entire project team and enabling collaborative, informed decision making for the owner's benefit, regardless the contractual project delivery method.

Collect, organize, and integrate information that is transformed into systems and performance descriptions, which can be tailored for any of the parties at any point in the process. Integrate OPR with specifications in a single platform to allow unparalleled coordination of all non-graphic project information.

#### Leverage the collective experience and expertise of every participant to deliver the best project, at the least risk, and with the greatest reward for every stakeholder.

Open the black box. Make specifications part of a transparent and cooperative process, managing and documenting both the OPR and design decisions while enabling continuous comparison and validation that the owner's needs are met. Design documentation progresses in an orderly fashion while closing information gaps, minimizing rework and controlling costs, and enabling the owner's informed consent. Lastly, deliver invaluable record data required for building commissioning and essential for proper building operation and maintenance.

#### **Conspectus Cloud delivers this promise.**

### **Conspectus Cloud Features**

**Day One Start:** Begin documenting project requirements at inception. Capture decisions as they occur to maintain continuous forward progress. Organize project information in a single repository accessible to all stakeholders.

**Permission-Based Cooperative Development:** Invite the entire project team including Owner, Designer, Specialty Consultant, Contractor, Subcontractor, Material Supplier, and other project participants. Set permission as Viewer, Commenter, Editor, or Author to suit each participant and level of expertise.

**Comments:** Direct specific comments via @mention to email specific participants in the best position to respond. Respond directly to the comment to build the discussion thread associated with the document text. Mark the comment resolved when a decision is made.

**Dashboard Status:** See what documents are included in the project, when they were last updated, who is responsible, and how many unresolved comments and editing choices remain to be completed. Sort and filter to find documents that are incomplete and those that need review and approval.

**Document Status and Version Control:** Set and change the status of each document throughout the progress of the project, from Pending through Released for Use. Save specific versions at development milestones. Compare two versions to see what changes occurred.

**Audit Trail:** Monitor activity history on each page to understand who participated and what events and actions occurred.

**Controlled Structure:** Enter text knowing that structure and formatting will always be correct following explicit, industry standard rules.

**Global and Document Tagging:** Use tagging to control what text is shown. Set global tags by geography, client, deliverable, code data, delivery method, and sustainability. Assign document tags by work results, principal products, and applications.

**Master Library Maintenance:** Create master UF and MF documents. Maintain multiple masters for future projects. Apply masters revisions to project documents.

**Notes:** Capture corporate knowledge in Edit Notes. Explain what must be specified and how choices must be made. Give guidance learned from experience to help ensure future projects benefit from lessons learned. Create Edit Notes in concert with document content as a teaching tool for staff development.

Accessible Anywhere: Access the tool with an internet browser. No software installation is required.

**Existing MF DOCX Specifications Import:** Use a simple import to upload existing MF master specifications.

**UF and MF to DOCX Specifications Export:** Export is possible. Keeping the data within Conspectus Cloud maintains its integrity for the entire team and ensures an integrated data set is delivered to the owner.

**Feedback Collection:** Continuously collect relevant data from constructing, commissioning, and operating and maintaining the building.

### about the author **David Stutzman** AIA, FCSI, SCIP, CCS, LEED AP

David is a dynamic **speaker** on all technical topics; diverse **educator** for multiple levels in the AEC industry, a humble, multi-**award winner** in variety of industry associations; **author** of articles and contributions in publications in many areas; a recognized industry **revolutionist**; and most importantly, he is an **advocate for the construction owner**. David is formally educated and licensed as an architect, with a specialty in specifications and technical writing. His abilities include computer programming and pretending to be an angler while boating.

Specializations include Owner Standards and Guidelines, Preliminary Project Development, UniFormat<sup>®</sup> as a tool to advance and standardize the classification of building systems and assemblies for element descriptions and analysis, MasterFormat<sup>®</sup>, risk management strategies, and the Fiduciary Duty Initiative.



## Contact us to Request a demonstration for you and your team

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28