



2021 CPSM Rev. 1 issued March 1, 2022

The 2021 edition of the [Construction and Professional Services Manual \(Rev. 1\)](#) was issued on March 1, 2022. A PDF of the current CPSM edition along with [DEB Notice 030122](#) summarizing the significant changes from the prior Manual version are both available on the DEB website.

CPSM changes were made to reflect recent legislative changes, updated legal interpretations and administration initiatives, and to improve communication and business operations. Because some changes are a result of changes to the *Code of Virginia*, these changes require immediate compliance. Therefore, a CPSM revision is effective on the date issued for all projects that do not have an approved CO-6 or working drawings approved by DEB. See CPSM Section 3.2.5.1 for how these changes impact A/E services and contracts.

Some of the more notable changes to the 2021 CPSM Rev. 1 are summarized in this article. *The delegated design* updates in CPSM Chapters 3 and 5 are discussed in a separate article.

- **Baby Changing Facilities in State-Owned or Leased Buildings**

As a result of a study commissioned by a former Secretary of Administration, the requirement to provide baby changing facilities in both existing and new state-owned or leased buildings was added as Section 4.4.3 in the 2020 edition of the CPSM. This section has been revised for secure facilities. If an agency chooses not to provide baby changing facilities in a building because security protocols are in place that do not permit children under the age of 30 months as visitors, a letter from the Agency Head documenting this decision and justification may be submitted to DEB.

- **Maximum Number of Drawings Per Volume**

For consistency in project drawing organization between electronic submittals and paper Permit Sets, and so that paper Permit Sets do not exceed 30 pounds per volume, each electronic and paper volume of drawings submitted to DEB shall include a maximum of 200 sheets.

- **IOC Forms specific to Job Order Contracting Procurements**

A number of forms related to Job Order Contracting were created in 2020. Some forms pertain to term contract procurement for Job Order Contracting. Other forms pertain to the project job order, and are

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to be included in the Project Manual in place of other front end forms typically included in the Project Manual for bidding and contracting. CPSM Chapters 5 and 7 were updated to clarify use of specific JOC forms.

- **Seismic Criteria on Structural Drawings**

By providing additional seismic criteria information on the documents, the structural reviewer can more easily verify the seismic design category and seismic base shear.

- **Applied Fire Resistant Materials**

Revised requirements for extent of spray-applied fire resistant materials at connections to protected steel members based on new guidelines that have been made available by the spray applied materials industry, testing facilities, and best practices.

- **Climate Zone**

Because of information pertaining to climate zones in documents referenced by the newly adopted 2018 International Green Construction Code (IgCC), climate zones in Virginia have been modified.

- **Outdoor Air Flushing Sequence of Operations**

Due to the concern for airborne contaminants, this section has been added to require a pre-programmed purge sequence in building automation systems.

- **Builder's Risk Insurance Valuation**

DEB coordinated with the Division of Risk Management to better match the builder's risk insurance minimum coverage limits with the scope of work for the project, and revised form CO-7 "General Conditions of the Construction Contract" accordingly. The CPSM has been updated to reflect the changes made to the "General Conditions of the Construction Contract".

- **Reports**

DEB obtains data from and coordinates with other agencies to prepare and compile a variety of reports each year. Many of the reports are legislatively mandated, and are prepared by DEB on behalf of the Director of DGS as required in accord with the *Code of Virginia*. Other reports are a requirement of the 2018 Virginia Uniform Statewide Building Code. Because the reports include information that must be provided by agencies to DEB in a timely manner, Section 8.8 was updated to provide agencies with a comprehensive list of requirements, frequency, and general instructions for each report.



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Design Assist

Design-Assist (DA) is defined as a **procurement method** by which one or more subcontractors are retained, prior to the completion of design, to assist the architect, engineer, or construction manager in the development of the design and construction documents.

The key terms in this definition are: **procurement method** and **retained**. Private entities use DA, but the terms **procurement method** and **retained** have particular significance for public procurement. Commonwealth construction procurements are required to be made in accord with the VPPA and CPSM by either low bid or competitive negotiation. Competitive negotiation is further defined in Code of Virginia §2.2-4303 as either Design-Build (DB) or Construction Management at Risk (CM). Neither the VPPA nor CPSM recognize DA as a **procurement method**.

Design-Assist is not applicable to either Low Bid, because the design is completed prior to bidding, or DB, because the design is a part of the contract; therefore, questions related to DA are limited to CM procurements. It is in the context of CM that the term **retained** is of particular importance.

Competition in CM construction procurements may be impacted by DA if subcontractors are retained for construction services prior to or at the completion of design. Although a CM may use a subcontractor to assist with preconstruction services and that involvement may give that subcontractor special knowledge of the design, it does not reduce competition if the work is openly bid among subcontractors. But to the contrary, if construction services are awarded to the subcontractor that provided DA (or that subcontractor is given the opportunity to be the only bidder contingent upon certain conditions being met), the intent of the VPPA that *"competition be sought to the maximum feasible degree" and that "all procurement procedures be conducted in a fair and impartial manner with avoidance of any impropriety or appearance of impropriety"* is not met.

Note that this limitation does not limit the ability of A/E's or CMs to consult with subcontractors for design assistance, or provide DA as part of the Pre-Construction Services, but this DA shall not provide any guarantee of award of the construction contract for the work to a subcontractor without competition.

A/E professional services are regulated by the Department of Occupation Regulation (DPOR). Construction documents as defined by DPOR are required by both DPOR and the CPSM to be signed, dated and sealed by the Registered Design Professional (RDP), A/E of record, to take responsibility for the design. Complying with this regulation effectively removes A/E professional services from the discussion of DA because the design is to be solely the responsibility of the A/E of record. The subcontractor providing the DA provides advice, but the final design is the A/E's.

It is the sole responsibility of the CM@R contractor to independently provide the Pre-Construction Services. It is the sole responsibility of the A/E to provide design services. DA as a construction procurement method is neither permitted by the Code of Virginia nor recognized in the CPSM. Any DA provided would need to be provided within the confines of the CM's Preconstruction Services and have no guarantees to the subcontractor for award of the construction work.

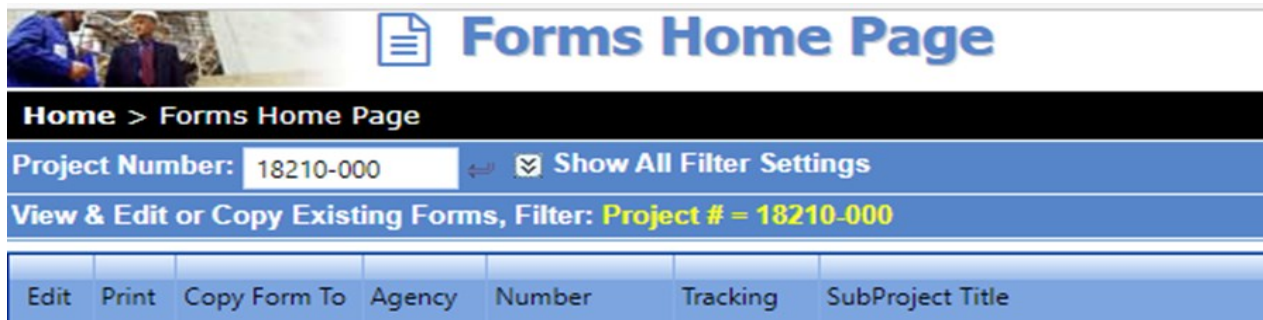
Tips and Reminders:

Use the Power of BITS to Create Forms

When a new form, such as a Building Permit or Certificate of Use and Occupancy, needs to be created for a project, most of the information included in previously approved forms for that project is easily incorporated into the new form.

It is not necessary to re-input or re-type the information into the new form if you follow these steps:

1. In BITS, go to Forms Home and type in the 8 digit project number (omitting the 3 digit agency number that all project numbers begin with). All BITS forms associated with that project number will appear in a list (if existing forms are missing from the list, check your filter settings)



Forms Home Page

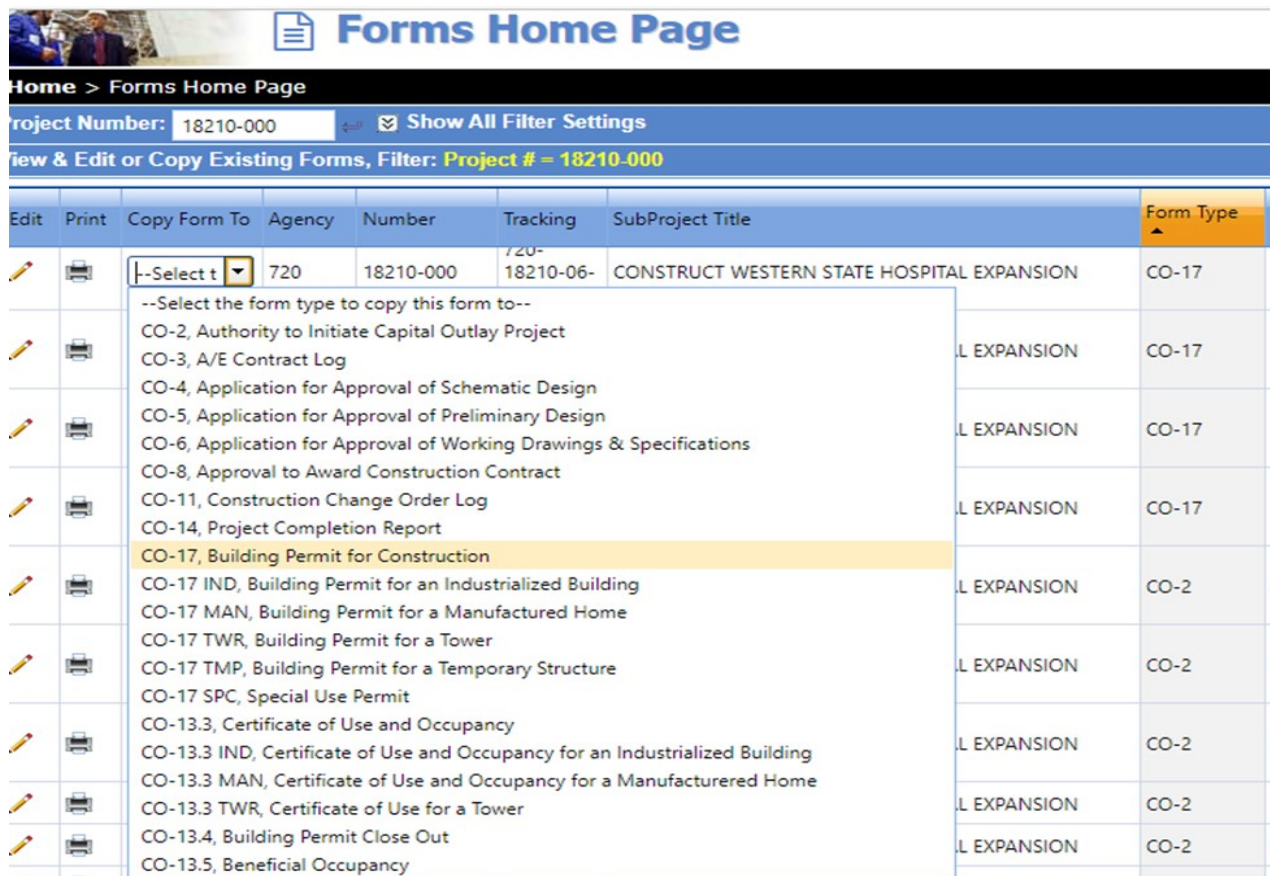
Home > Forms Home Page

Project Number: 18210-000 ☒ Show All Filter Settings

View & Edit or Copy Existing Forms, Filter: Project # = 18210-000

Edit	Print	Copy Form To	Agency	Number	Tracking	SubProject Title
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2. Find the existing form that is most similar to the new one that needs to be created (Example- for a building permit extension, find the most current CO-17). Do not open that form, but go to the drop down menu under “Copy Form To” for the current form and select the type of new form to create from the existing form.



Forms Home Page

Home > Forms Home Page

Project Number: 18210-000 ☒ Show All Filter Settings

View & Edit or Copy Existing Forms, Filter: Project # = 18210-000

Edit	Print	Copy Form To	Agency	Number	Tracking	SubProject Title	Form Type
		--Select the form type to copy this form to--	720	18210-000	18210-06-	CONSTRUCT WESTERN STATE HOSPITAL EXPANSION	CO-17
		CO-2, Authority to Initiate Capital Outlay Project				L EXPANSION	CO-17
		CO-3, A/E Contract Log				L EXPANSION	CO-17
		CO-4, Application for Approval of Schematic Design				L EXPANSION	CO-17
		CO-5, Application for Approval of Preliminary Design				L EXPANSION	CO-17
		CO-6, Application for Approval of Working Drawings & Specifications				L EXPANSION	CO-17
		CO-8, Approval to Award Construction Contract				L EXPANSION	CO-17
		CO-11, Construction Change Order Log				L EXPANSION	CO-17
		CO-14, Project Completion Report				L EXPANSION	CO-17
		CO-17, Building Permit for Construction				L EXPANSION	CO-2
		CO-17 IND, Building Permit for an Industrialized Building				L EXPANSION	CO-2
		CO-17 MAN, Building Permit for a Manufactured Home				L EXPANSION	CO-2
		CO-17 TWR, Building Permit for a Tower				L EXPANSION	CO-2
		CO-17 TMP, Building Permit for a Temporary Structure				L EXPANSION	CO-2
		CO-17 SPC, Special Use Permit				L EXPANSION	CO-2
		CO-13.3, Certificate of Use and Occupancy				L EXPANSION	CO-2
		CO-13.3 IND, Certificate of Use and Occupancy for an Industrialized Building				L EXPANSION	CO-2
		CO-13.3 MAN, Certificate of Use and Occupancy for a Manufactured Home				L EXPANSION	CO-2
		CO-13.3 TWR, Certificate of Use for a Tower				L EXPANSION	CO-2
		CO-13.4, Building Permit Close Out				L EXPANSION	CO-2
		CO-13.5, Beneficial Occupancy				L EXPANSION	CO-2

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Use the Power of BITS to Create Forms Continued

3. The new form (CO-17 Building Permit for Construction for this example) will be created, with most of the information from the existing CO-17 automatically included on the new form.
 - Checked boxes do not translate over, and will need to be rechecked on the new form.
 - A new field has been added pertaining to flood plain policy (Executive Order 45) and the appropriate selection from the drop down menu must be chosen before the form can be saved.



 A screenshot of a web form field. The label is 'Is a variance to EO-45 (2019) Floodplain Policy required?'. To the right is a dropdown menu with the text '--Select One--' and a downward arrow. Further right is a red 'Required' label. The entire field has a light blue background and a torn paper edge effect on the bottom.

4. Save the new form, revise the Estimated Construction Completion Date, and submit to DEB via BITS.

 A screenshot of a web form field. The label is 'Estimated Construction Completion Date'. To the right is a checkbox labeled 'N/A'. Further right is a date input field showing '03/31/2022' and a calendar icon. The field has a light blue background.

Contact your agency's assigned DEB Lead Reviewer with any questions.

Occupancy Considerations – Part 1 of 2

Floor Area Determination and Group Classification

Buildings can be diverse in nature and serve purposes of many kinds, but there is one thing that most of them have in common: buildings are made for people. Some are designed for just a few people, while others are made to serve thousands of people. Critical questions that must be answered when approaching the design of any building are, “how is the building intended to be used?”, and “how many people will need to be accommodated?” These questions will be explored in this two-part series with the aim of providing practical guidance for designers and owners in establishing these critical parameters of any building program.

It is possible that the various terms associated with the purpose of a building, found scattered throughout the 2018 Virginia Construction Code (VCC), can lead to some confusion. Terms such as “occupancy”, “group”, “classification”, “use”, and “function” can be misunderstood and used interchangeably. In order to provide a working definition for each of these terms, the following shall clarify the intent when referenced:

Occupancy – The utilization of a building

Group (or sometimes expressed as **Occupancy Group**) – A specific type or category of occupancy as found in VCC 303 thru 312 (e.g. A-3, B, I-3, R-1, S-2, etc.)

Classification – The assignment of a group to an occupied area of a building

Use – The specific purpose of an occupied area which is subordinate to the applicable group as listed in the sub-sections of VCC 303 thru 312 (e.g. Dance Hall, Library, Correctional Center, etc.)

Function – The manner in which an occupied area is used as tabulated in VCC Table 1004.5

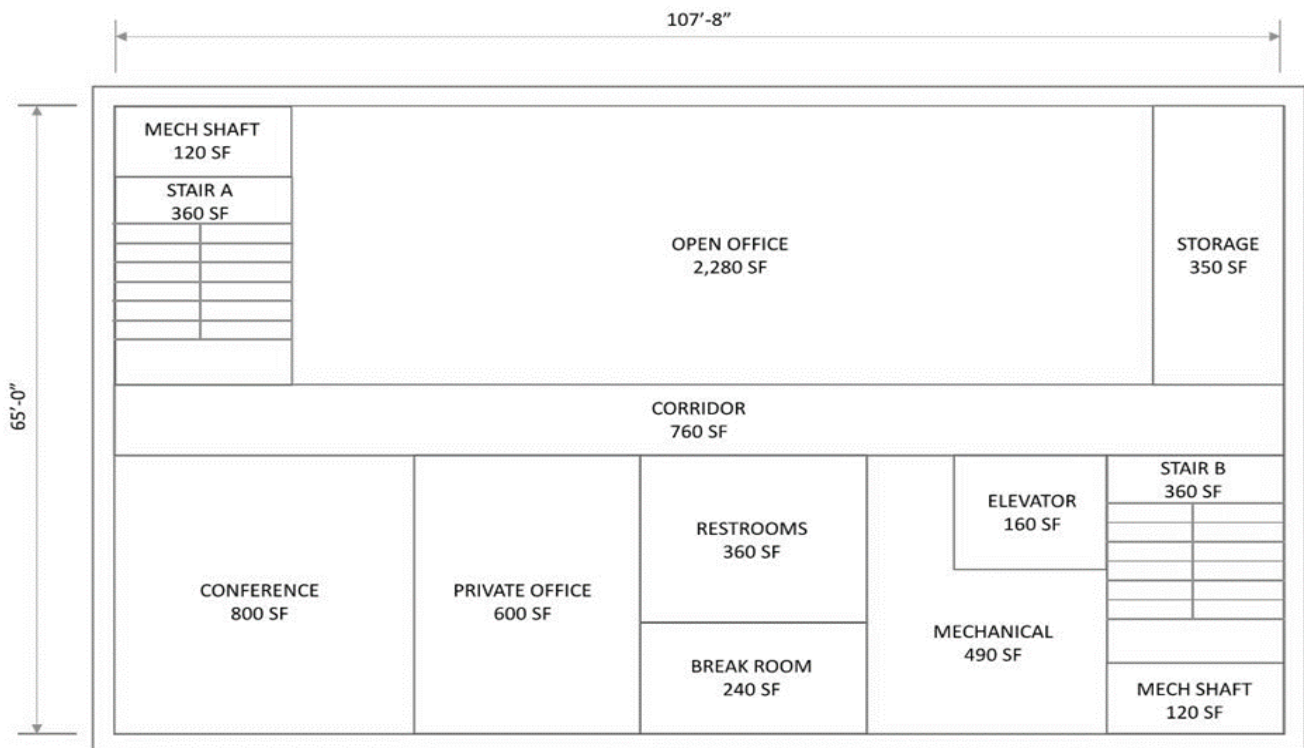
Occupancy Considerations – Part 1 of 2

Floor Area Determination and Group Classification

These terms may at times be lumped together in the VCC, such as occupancy group, occupancy classification, use and occupancy, etc. The important thing to remember, however, is that each occupied space is required to be classified as a distinct group. Various uses within each applicable group will further clarify the specific purpose of a space and may also introduce other code requirements, such as the use-specific provisions of VCC chapter 4. Furthermore, within each specific use, certain activities, or functions, will be performed which ultimately serves as a basis for the number of occupants to account for.

The *Occupant Load* (OL) of a building or space is defined in the VCC as “the number of persons for which the means of egress of a building or portion thereof is designed.” In fact, much of a building’s design is driven by this key information. In addition to the means of egress, the OL has a direct impact on the required fire suppression systems, fire alarm systems, the number of required plumbing fixtures, finishes, and various other design features regulated by the code. As critical as this information is, methods for determining the OL of a building vary throughout the design community. Nevertheless, before the question of “how many people?” can be accurately answered, the applicable floor area as well as the group classification must be established. These fundamental prerequisites to the determination of the OL will be explored next.

The example scenario that follows is intended to illustrate an acceptable method for classifying the various groups on a given floor of a building and, ultimately, for determining the OL in accordance with the VCC. The allowable building height and the allowable number of stories will not be addressed here, although it is acknowledged that these are also important design considerations which are closely related to the topic at hand. For simplicity, only a single floor of a fictitious building will be considered. The following example floor plan will serve as a basis for this discussion:



The process for classifying the occupancy and determining the number of people on a given floor of a building can be broken down into four basic steps: 1) Determine the Gross Floor Area, 2) Classify the Applicable Group(s) on the Floor, 3) Determine the OL in accordance with VCC 1004, and 4) Document the OL on the Drawings. The first two steps are explained in the sections that follow.

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Occupancy Considerations – Part 1 of 2

Floor Area Determination and Group Classification:

Continued

1. Determine the Gross Floor Area

Gross floor area is defined in VCC chapter 2 as “The floor area within the inside perimeter of the exterior walls of the building under consideration, exclusive of vent shafts and courts, without deduction for corridors, stairways, closets, the thickness of interior walls, columns or other features ...”

In this example, the mechanical shafts adjacent to Stairs A & B may be deducted from the gross floor area since they do not open onto the floor. All other spaces are included per the VCC definition above. The gross floor area is therefore calculated as follows: $(65 \text{ FT} \times 107.67 \text{ FT}) - (120 \text{ SF} + 120 \text{ SF}) = 6,759 \text{ SF}$. Designers may incorrectly assume that portions of the building such as corridors, restrooms, stairs, etc. do not need to be included when determining the OL. However, when using a gross Occupant Load Factor such as a “Business Area” function from VCC Table 1004.5 (more on this in the next article), it is important to account for the entire gross floor area as defined. Once the floor area is established, it’s time to classify the groups.

2. Classify the Applicable Group(s) on the Floor

The example layout includes a combination of offices, meeting spaces, storage, and mechanical spaces. Offices, including related spaces such as restrooms, circulation paths, etc. are typically classified as a Business (B) group per VCC 304. In the example floor plan, this is considered to be the primary type of occupancy for the floor. In other words, the main reason for occupying this floor is to conduct business-related tasks.

Meeting spaces, by nature of the name alone, are considered to be assembly spaces. However, they may either be classified as a Business (B) group or as Assembly (A-3) group, depending on the size and number of occupants in the space. Per VCC 303.1.2, ancillary spaces used for assembly purposes which are less than 750 SF or have fewer than 50 occupants may be classified as a Business (B) group, or, whatever the primary group happens to be for the floor. In this example, the Break Room, while it serves an assembly purpose, is classified as part of the Business (B) group since it is less than 750 SF. The Conference Room is classified as an Assembly (A-3) group since it is greater than 750 SF. This means that there are now two groups that must be accounted for in the design of the floor: Business (B) and Assembly (A-3). When more than one group is applicable in a building, the mixed use and occupancy provisions of VCC 508 come into play.

The Conference Room could be considered as any one of the following:

- 1) An Accessory group to the main Business (B) group per VCC 508.2;
- 2) A Non-separated group per VCC 508.3; or
- 3) A Separated group per VCC 508.4.

In this example, however, the Conference Room is $(800 \text{ SF} / 6,759 \text{ SF}) \times 100 = 11.8\%$ of the gross floor area, which exceeds the 10% limit for Accessory groups per VCC 508.2.3. This leaves only two viable options.

In this example, however, the Conference Room is $(800 \text{ SF} / 6,759 \text{ SF}) \times 100 = 11.8\%$ of the gross floor area, which exceeds the 10% limit for Accessory groups per VCC 508.2.3. This leaves only two viable options.

The Storage Room and the Mechanical Room would typically be classified as a Storage (S-1) group and could be considered *Accessory, Non-separated, or Separated*. (Note: these types of spaces may also fall under the *Incidental Use* provisions of VCC 509 and could require additional separation or fire protection, depending on the contents of the space. If an incidental use applies, the space is not individually classified but is considered part of the primary group of the floor per VCC 509.2.) Designers may attempt to classify these spaces as a Storage (S-2) group in order to take advantage of the additional allowable floor area. However, it is not often a realistic assumption that the user will only store low-hazard, non-combustible items here. It is generally a prudent design decision to anticipate actual usage of these rooms and to plan for the worst case accordingly.

In this example, the Storage Room is $(350 \text{ SF} / 6,759 \text{ SF}) \times 100 = 5.2\%$ of the *gross floor area*, which qualifies this space to be considered *Accessory* to the primary Business (B) group. The Mechanical Room is $(490 \text{ SF} / 6,759 \text{ SF}) \times 100 = 7.2\%$ of the *gross floor area*, which qualifies this space to also be considered *Accessory* to the Business (B) group. However, the aggregate area of *Accessory* groups cannot exceed 10% of the floor area per VCC 508.2.3. In this example, the Storage Room and the Mechanical Room both qualify individually to be considered *Accessory*, but the aggregate area of both spaces is $(490 \text{ SF} + 350 \text{ SF}) / 6,759 \text{ SF} = 12.4\%$. Therefore, either the Storage Room or the Mechanical Room may be considered *Accessory*, but not both.

There may be times when the most restrictive group in a *Non-separated* design yields too small of an allowable building floor area per VCC Table 506.2. In this case, the designer may either opt to increase the construction type classification of the building or consider a *Separated* design approach in accordance with VCC 508.4.

Based on the analysis of the example floor, the most appropriate group classification is determined to be: ***Non-separated B, A-3, & S-1 with Accessory S-1***. Or, simply ***Non-separated B, A-3, & S-1***, depending on the construction type classification of the building.

Final Thoughts

A thorough understanding of a building's purpose coupled with an accurate group classification is an important first step in the process of determining the OL. Not only does this information define the fundamental intent of the building, but it serves as the foundation for all subsequent code requirements that will invariably influence the overall design and cost of the project. As seen here, there are various ways to approach group classification in a building, some of which are more economical than others. Recognizing that each building is unique, designers and agencies are encouraged to be proactive and consult with DEB early in the design process to discuss project-specific applications of these important principles. Stay tuned for part two of this series where recommended procedures for determining and documenting the OL will be explored.



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Job Opportunities

DEB will be posting the following positions soon:

- State Review Architect
- State Review Civil/Structural Engineer
- State Review Energy Engineer
- State Review Mechanical Engineer

For more information check the [DGS job opportunities](#) on jobs.Virginia.gov.

2018 Code Update Reminder

Reminder— Projects designed under the 2015 VUSBC that have not been issued a building permit prior to July 1, 2022 will be required to comply with the 2018 VUSBC.

DEB Notices

Two DEB Notices were issued between January and March 2022: DEB Notices can be found in the [DEB Notices section](#) of the [DEB Website](#).

030122	2021 Edition - Construction & Professional Services Manual - Revision 1
012022	Rescind Notice 082321 - Supplemental General Conditions for Executive Directive #18 (2021)

DEB Forms Updates

DEB added forms in February and March 2022. The forms listings below identify the forms that were added and describes the forms.

Form Name	DGS Form #	Version
DEB Forms Master List	DGS-30-000	03/22
DEB Forms Master List	DGS-30-000	02/22

