

Feature 63: Daylight Fenestration

Part 1: Window Sizes for Working and Learning Spaces

Part 4: Window Sizes for Living Spaces

WELL Building Standard™ (WELL)™
WELL v1 with the Q1 2020 addenda

How to use this document:

This document is a guide for creating the architectural drawing(s) required for Part 1: Window Sizes for Working and Learning Spaces or Part 4: Window Sizes for Living Spaces Feature 63: Daylight Fenestration. The level of detail provided by teams when creating this drawing is up to their discretion, as long as each of the requirements are sufficiently addressed.

- Part 1 or Part 4: Architectural drawings instructions have been provided.

The text is updated to the Q1 2020 version of the WELL Building Standard, which may vary from previous or future versions of WELL.

TABLE OF CONTENTS

PART 1: Window Sizes for Working and Learning Spaces	3
PART 4: Window Sizes for Living Spaces	5

Disclaimer

This document includes some basic language taken from the WELL Building Standard™ that can be used by project teams working on projects seeking certification under the WELL Building Standard. The content (text, graphics, images, and other material) provided herein is for informational and educational purposes only. This document should not be published or used in its entirety and is only intended to provide assistance for project teams. Each project team is responsible for its own achievement of WELL features for the associated project, regardless of whether or not the project team adapts text from this documentation guidance. The International WELL Building Institute pbc, does not assume any liability or responsibility to the user or any third parties for the accuracy, completeness, or use of or reliance on any information contained in this document. Although the information contained in this document is believed to be reliable and accurate, all materials set forth within are provided “as is” and the International WELL Building Institute pbc does NOT make any warranties of any kind, either express or implied, including but not limited to warranties of the accuracy or completeness of information, the suitability of the information for any particular purpose, or any representation or warranty that similar submissions regarding a Project Area will comply with a given aspect of WELL Certification, or that a Project Area will qualify for or be granted WELL Certification. The International WELL Building Institute pbc, reserves the right to change all or any portion of this document at any time for any reason without prior notice.

© Copyright 2018-2020 International WELL Building Institute pbc. All rights reserved. No part of this document or the information contained within it may be used for any purpose other than that stated within this document.

FEATURE 63: DAYLIGHT FENESTRATION

PART 1: WINDOW SIZES FOR WORKING AND LEARNING SPACES ARCHITECTURAL DRAWINGS INSTRUCTIONS

1. Provide north, south, east and west external elevations. Visually identify (ex. highlight, circle) facades along regularly occupied spaces.
2. On these identified facades, highlight the glazing area and list the total square meters / square footage of the glazing surface area (for each story or each regularly occupied room).
3. Similarly, measure the height and length of each exterior wall and list the gross exterior wall surface area (by each story or each regularly occupied room).
4. For all regularly occupied spaces, show calculations to demonstrate that window-wall ratio as measured on external elevations is between 20% and 60%. If the percentage exceeds 40%, the project must indicate that external shading or adjustable opacity glazing is used to control unwanted heat gain and glare.

$$20\% \leq \frac{\text{Glazing Area (m}^2 \text{ or ft}^2\text{)}}{\text{Gross Exterior Wall Area (m}^2 \text{ or ft}^2\text{)}} \leq 60\%$$

5. Next, create a visually distinct demarcation line (colored, dashed, or arrowed) that marks the wall height 2.1m [7 ft] from the floor of each story.
6. Determine the total glazing area that is above the demarcation lines (2.1m / 7ft above the floor).
7. Lastly, show calculations to demonstrate that between 40% and 60% of window area is at least 2.1 m [7 ft] above the floor.

$$20\% \leq \frac{\text{Glazing Area 2.1 m or 7 ft Above the Floor (m}^2 \text{ or ft}^2\text{)}}{\text{Gross Glazing Area (m}^2 \text{ or ft}^2\text{)}} \leq 60\%$$

Example Calculations:

The office space on the second floor is bordered by glazing on the west, north and east facades.

The west and east façades measure 10 feet in height and 50 feet in length. Each window begins 3 feet above the floor and measures 7 feet in height and 4 feet in length. There are 10 identical windows.

- a. Window-wall ratio as measured on external elevations is between 20% and 60%.

$$\frac{\text{Glazing Area (ft}^2\text{)}}{\text{Gross Exterior Wall Area (ft}^2\text{)}} = \frac{7\text{ft} \times 4\text{ft} \times 10}{50\text{ft} \times 10\text{ft}} = \frac{280\text{ft}^2}{500\text{ft}^2} = 56\%$$

$$20\% \leq 56\% \leq 60\% \rightarrow \text{Compliant}$$

The west façade incorporates adjustable opacity glazing, as the window-wall ratio exceeds 40%.

- b. Between 40% and 60% of window area is at least 2.1 m [7 ft] above the floor.

$$\frac{\text{Glazing Area 2.1 m or 7 ft Above the Floor (ft}^2\text{)}}{\text{Gross Glazing Area (ft}^2\text{)}} = \frac{120\text{ft}^2}{280\text{ft}^2} = 43\%$$

$$40\% \leq 43\% \leq 60\% \rightarrow \text{Compliant}$$

The north façades measures 10 feet in height and 150 feet in length. Each window begins 3 feet above the floor and measures 7 feet in height and 4 feet in length. There are 30 identical windows.

- a. Window-wall ratio as measured on external elevations is between 20% and 60%.

$$\frac{\text{Glazing Area (ft}^2\text{)}}{\text{Gross Exterior Wall Area (ft}^2\text{)}} = \frac{7\text{ft} \times 4\text{ft} \times 30}{150\text{ft} \times 10\text{ft}} = \frac{840\text{ft}^2}{1500\text{ft}^2} = 56\%$$

$$20\% \leq 56\% \leq 60\% \rightarrow \text{Compliant}$$

The north façade incorporates adjustable opacity glazing, as the window-wall ratio exceeds 40%.

- b. Between 40% and 60% of window area is at least 2.1 m [7 ft] above the floor.

$$\frac{\text{Glazing Area 7 ft Above the Floor (ft}^2\text{)}}{\text{Gross Glazing Area (ft}^2\text{)}} = \frac{360\text{ft}^2}{840\text{ft}^2} = 43\%$$

$$40\% \leq 43\% \leq 60\% \rightarrow \text{Compliant}$$

ONLY APPLICABLE FOR MULTIFAMILY RESIDENTIAL:

PART 4: WINDOW SIZES FOR LIVING SPACES
ARCHITECTURAL DRAWINGS INSTRUCTIONS

1. Provide north, south, east and west external elevations. Visually identify (ex. highlight, circle) facades along regularly living rooms and bedrooms.
2. On these facades, highlight the glazing area for living rooms and bedrooms and list the total square meters / square footage of the glazing surface area in a table. For example:

Room	Glazing Area (m^2 or ft^2)	Exterior Wall Area (m^2 or ft^2)	Window- Wall Ratio	Compliant? (Y / N)
Living Room A	90 ft^2			
Living Room B	24 ft^2			
Bedroom A	8 ft^2			

3. Similarly, measure the height and length of each exterior wall of living rooms and bedrooms and list the gross exterior wall surface area in a table. For example:

Room	Glazing Area (m^2 or ft^2)	Exterior Wall Area (m^2 or ft^2)	Window- Wall Ratio	Compliant? (Y / N)
Living Room A	90 ft^2	200 ft^2		
Living Room B	55 ft^2	100 ft^2		
Bedroom A	20 ft^2	80 ft^2		

4. For living rooms, show calculations to demonstrate that window-wall ratio as measured on external elevations is between 30% and 60% for each room. For example:

$$30\% \leq \frac{\text{Glazing Area } (m^2 \text{ or } ft^2)}{\text{Gross Exterior Wall Area } (m^2 \text{ or } ft^2)} \leq 60\%$$

Room	Glazing Area (m^2 or ft^2)	Exterior Wall Area (m^2 or ft^2)	Window- Wall Ratio	Compliant? (Y / N)
Living Room A	90 ft^2	200 ft^2	45%	Y
Living Room B	55 ft^2	100 ft^2	55%	Y
Bedroom A	20 ft^2	80 ft^2		

5. For bedrooms, show calculations to demonstrate that window-wall ratio as measured on external elevations is between 20% and 40% for each room. For example:

$$20\% \leq \frac{\text{Glazing Area (m}^2 \text{ or ft}^2\text{)}}{\text{Gross Exterior Wall Area (m}^2 \text{ or ft}^2\text{)}} \leq 40\%$$

Room	Glazing Area (m ² or ft ²)	Exterior Wall Area (m ² or ft ²)	Window- Wall Ratio	Compliant? (Y / N)
Living Room A	90 ft ²	200 ft ²	45%	Y
Living Room B	55ft ²	100ft ²	55%	Y
Bedroom A	20ft ²	80ft ²	25%	Y

Example Calculations:

The living room façade measures 10 feet in height and 20 feet in length. There are 5 windows that measure 5 feet in height and 4 feet in length.

- a. Window-wall ratio as measured on external elevations is between 30% and 60%.

$$\frac{\text{Glazing Area (ft}^2\text{)}}{\text{Gross Exterior Wall Area (ft}^2\text{)}} = \frac{5\text{ft} \times 4\text{ft} \times 10}{10\text{ft} \times 20\text{ft}} = \frac{100\text{ft}^2}{200\text{ft}^2} \equiv 50\%$$

$$30\% \leq 50\% \leq 60\% \rightarrow \text{Compliant}$$

A bedroom façade measures 3.5 meters in height and 4 meters in length. There are 4 windows that measure 1.2 meters in height and 1 meter in length.

- a. Window-wall ratio as measured on external elevations is between 20% and 40%.

$$\frac{\text{Glazing Area (m}^2\text{)}}{\text{Gross Exterior Wall Area (m}^2\text{)}} = \frac{4.8\text{m}^2}{14\text{m}^2} = 34.3\%$$

$$20\% \leq 34.3\% \leq 40\% \rightarrow \text{Compliant}$$