

CALCULATING FLOOR AREA

REGULATION REDESIGN BACKGROUND

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ABOUT THE REGULATION REDESIGN BACKGROUNDERS SERIES

This backgrounders series is developed for the sole purpose of the Regulation Redesign project, which is the City of Vancouver's first comprehensive review of its land use regulations and policies. The purpose of the project is to simplify regulations, make them more consistent and easier to find. These backgrounders documents are created in order to inform and progress public and staff dialogue for the project, and should only be used for information purposes. The section "What We've Heard" is a compilation of issues, ideas and comments from 770+ members of the public and staff during the various engagement events held in Phase 1 of the project (July 2018 - February 2019).

These documents do not form a part of the City of Vancouver's land use regulation documents.

For more information about the Regulation Redesign Project, visit vancouver.ca/RegRedesign.

A PRIMER ON THE CONCEPTS

Floor Area

Not defined in the Zoning and Development By-law, but refers to the area of built space

Net floor area

- The sum of all the areas of a building, less any exclusions as set out in the applicable regulation in the Zoning and Development By-law
- Sometimes referred to as the usable floor area
- Amount of space permitted by zoning regulations

Gross floor area

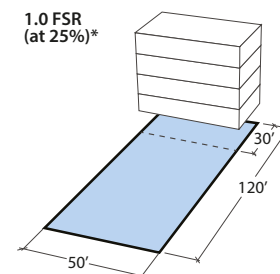
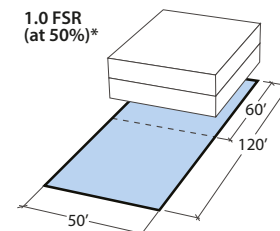
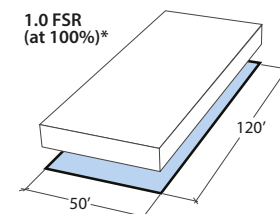
- The sum of all the areas of a building when measured from the exterior faces of exterior walls (including area obtained through exclusions)

Floor space ratio (FSR)

- The figure obtained when the area of the floors of the buildings on a site is divided by the area of the site (Section 2 Definitions)
- Typically there is a base permitted FSR that can be increased by the Director of Planning or Development Permit Board if criteria are met (e.g. character retention in RS zones or provision of amenities)
- In some RS districts there is an additional above-grade FSR regulation to limit massing and impact on neighbours

Exclusions from FSR (or FSR exclusions)

- Some features are excluded from the computation of FSR to incentivize them, e.g. wall thickness to improve energy efficiency, storage space to improve livability
- Some exclusions are unlimited e.g. attics, open patios, while others are capped to limit the feature e.g. bay windows, balconies



■ Site area
□ Floor area
* Site area coverage %

WHAT WE'VE HEARD

Issues

Complexity and variation of the regulations cause confusion

- Hard to know what development potential is
- Counting floor area varies by district schedule
- Counting floor area is complex due to number of inclusions/ exclusions to be considered
- Rules around how to account for porches, decks, balconies etc. are particularly challenging

Rules are applied and interpreted inconsistently

- Too many unwritten rules
- Criteria for exclusions are not clear
- Porches, decks and balconies are not defined so it's not clear what's excluded

Rules are not written clearly

- Not clear that max FSR may not be achievable for all projects e.g. may need character retention
- No flexibility for common changes during construction e.g. adding air conditioning
- Counting floor area does not speak to volume, massing
- FSR and exclusions could be worded better

There are unintended consequences stemming from the rules

- Storage spaces are being designed/ converted to living space
- If a development is at the maximum permissible FSR and there is a proposal to combine two units into one, a situation is created where one of the previously excluded storage rooms can no longer be excluded from FSR, hence creating a non-conformity

Some rules are inequitable

- Recent floor area exclusions for wall assemblies benefitted builders who build to code (they get a 2% exclusion to account for shift from 2x6 to 2x8); those who are building higher performance buildings only get to exclude a portion of wall beyond what is required by the Vancouver Building By-law

WHAT WE'VE HEARD

Ideas

Regulate gross floor area only

- No more exclusions - have one overall FSR that is increased to reflect gross floor area, or define floor area and in definition clarify what is not counted as floor area

Simplify and standardize regulations

- Measure to the interior side of the exterior wall, with massing regulated by setback provisions
- Create more consistent regulations; make them the same across zoning districts
- Simplify FSR regulations so development potential is clear

Explore performance-based regulations

- Focus on the building envelope and not what happens inside it
- Regulations should reward good design e.g. FSR, permit times, staff discretion
- Increasing incentives to reward projects that achieve municipal objectives: Smaller scale development regulations, FSR and exclusions

Increase flexibility in the rules

- Add 10% flex to FSR
- Make building envelope in RS and RT bigger than the density allowed so that there is more flexibility

Exemptions from floor area

- Exempt loading corridors from floor area
- Heat Recovery Ventilation & Energy Recovery Ventilation in attic spaces could be exempted
- Remove exclusion for enclosed balconies and storage
- Allow covered decks to be exempted
- Define porches, decks and balconies so it is clear what is excluded

CASE STUDIES

Summary

Metro Vancouver municipalities define, measure, and administer floor area in a variety of ways.

- Some zoning bylaws make reference to other sections of the zoning by-law for more information on methodology (Burnaby). Others include methodology within their definitions (City of North Vancouver, Richmond, Surrey, Victoria). Still others employ both of these approaches (Coquitlam, District of North Vancouver).

City of Burnaby

Section 3 Definitions of Zoning Bylaw

- “**FLOOR AREA, GROSS**” means the total area of all the floors measured to the extreme outer limits of the building in accordance with the regulations set out in section 6.20.
- “**FLOOR AREA RATIO**” means the figure obtained when the gross floor area of all building on a lot less the exclusions permitted in accordance with section 6.20 is divided by the area of the lot.

Section 6.20 of Zoning Bylaw

- Computation of gross floor area and floor area ratio
- Sets out methodology and exclusions for all districts

City of Coquitlam

Part 2, 201 Definitions of Zoning Bylaw

- **DENSITY** means a measurement of development intensity on a *lot* which can be measured either by *dwelling units* per hectare or by the ratio of *gross floor area* to *lot area*.
- **FLOOR AREA** means the sum of the areas of each floor of a *building* or that portion of the area of the floor of a *building*, as identified elsewhere in this Bylaw measured to the *exterior sheathing* of the *building* or the centerline of the demising wall.
- **FLOOR AREA RATIO**, in the RTM-1 zone means the figure obtained by dividing the *floor area* (except that *floor area* will include *concealed parking* in the dwelling) by the *lot area*.
- **GROSS FLOOR AREA** means the total area of all enclosed floors in each *building* on a lot measured to the *exterior sheathing* of the *building*, excluding: *concealed parking areas*, part of the building below finished grade elevation that are not *habitable rooms*, *floor area* used for common maintenance, mechanical, or electrical purposes, racking systems that do not increase building occupancy load, *common amenity areas*, and completely enclosed and covered garbage and recycling facilities.

City of North Vancouver

Part 2, Interpretation of Zoning Bylaw

- “**Floor Space Ratio**” means a figure obtained by dividing the Gross Floor Area of the Buildings by the Site area;
- [Excerpt] “**Gross Floor Area**” means the total area of all the floors in each Building on a Lot, measured to the extreme outer limits of each Building, including all suites or Dwelling Units, commercial areas, recreational areas, and all areas giving access thereto, such as corridors, hallways, landings, foyers, staircases and stairwells, including any area under staircases and stairwells [Bylaw 7537 November 24, 2003] mezzanines, elevator shafts and Accessory Buildings, but excluding:
 - a) Exterior Wall thickness in excess of 0.165 metres (6.5 inches) up to a maximum exclusion of 0.305 metres (12 inches) provided that the wall thickness is utilized for the provision of insulating materials and/or protection against wind, water and vapour; [Bylaw 8464, May 30, 2016]
 - b) Any Accessory Building or portion of a floor used for Parking, Short-Term and Secure Bicycle Parking, or providing vehicular, bicycle or common pedestrian access to Parking areas, unless such Parking is a Principal Use

District of North Vancouver

Part 2, Interpretation of Zoning Bylaw

- “**floor space ratio**” means that figure obtained when the gross floor area of all buildings and structures, except those areas exempted by section 410, is divided by the lot area upon which the buildings and structures are situated;
- “**gross floor area**” means the total floor area of a building or structure measured to the exterior of its walls;
- “**residential floor area**” means the sum of the floor areas of all dwelling units including the areas occupied by walls and partitions, but excluding the floor areas of balconies;

Section 4 of Zoning Bylaw, General Regulations

- 410 sets out floor space ration exemptions for single family residential buildings in various zones

City of Richmond

Section 3.4 Use and Term Definitions of Zoning Bylaw

- **FLOOR AREA** means the total floor area of the building or structure, contained within the exterior face of the structural system of the exterior and basement walls.
- **FLOOR AREA RATIO** means the numerical value of the floor area of the building or structure relative to the site upon which it is located divided by the area of the site.
- **FLOOR AREA, GROSS (GFA)** means the total area of all horizontal floors, measured to the outer building limits, including all uses and all areas giving access such as corridors, hallways, landings, foyers, staircases and stairwells, and includes enclosed balconies and mezzanines, enclosed porches or verandas, elevator shafts and accessory buildings, except those used for parking.
- **FLOOR AREA, GROSS LEASABLE** means the total floor area designed for tenant occupancy and exclusive use including basements and upper floors.

City of Surrey

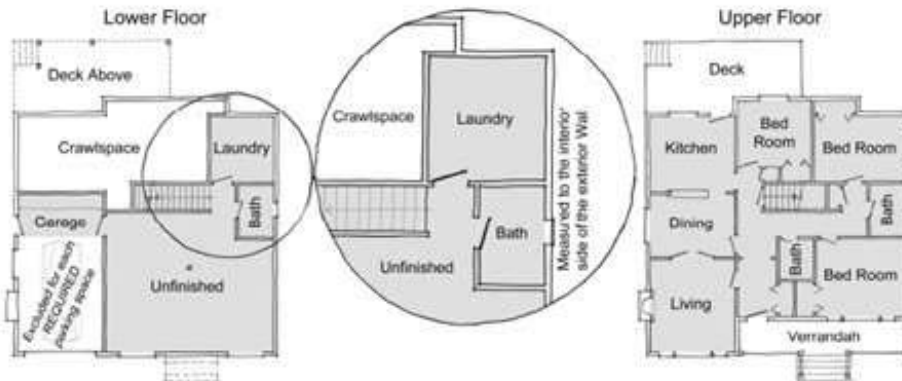
Part 1, Definitions of Zoning By-law

- **Density** means a measurement of development intensity on a *lot* which shall be in either *Floor Area Ratio* or *Unit Density*.
- **Density – Floor Area Ratio** means the figure obtained when the area of all the floors of the *buildings* constructed or proposed to be constructed on a *lot* is divided by the area of the *lot*, subject to the following:
 - a) The floor area of the *building* shall be measured to the lesser of the outside edge of the exterior walls or sheathing, excluding *basements*, crawl spaces less than or equal to 1.5 metres [5 ft.] clear height, *balconies*, canopies, terraces and *decks*;
 - b) when calculating the *floor area ratio*, *undevelopable* areas are excluded from the *lot* area in all zones other than in the single family *residential* zones except in RA, RA-G, RH and RHG Zones. Where the exclusion of the *undevelopable* areas in the RA, RA-G, RH and RH-G Zones results in a *lot* size that is less than the minimum *lot* size permitted in Section K of the Zone, the *floor area ratio* shall be calculated using the minimum lot size permitted in that Zone;
 - c) those areas used as an *accessory use* for *parking within the building envelope* or *underground parking* are excluded; and
 - d) where parking is a *principal use* of the lot, those areas which are used for *parking* within the outermost walls of a *building* or *underground* shall be counted in the calculation.
- **Gross Floor Area** means all the area of the floor enclosed by the outside edge of the exterior walls of a building, including without limitation stairways, elevator shafts, storage rooms and mechanical rooms.

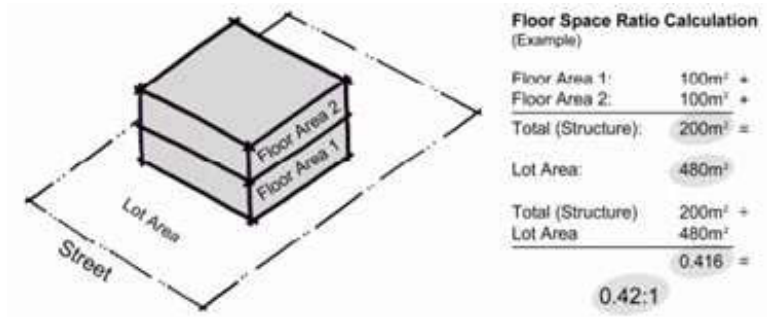
City of Victoria

Schedule A Definitions of Zoning Regulation Bylaw

- “Area” of a lot means its surface area in plan, but does not include any portion of land below a natural high water mark.
- “Area” when used in reference to a floor of a storey of a building means the entire area which in plan is enclosed by the interior face of the exterior walls of the storey at floor level plus the area enclosed by any cantilevered element that is within that storey and that is above floor level, but does not include of the following areas:
 - a) the area used or intended to be used for required parking or movement of motor vehicles, as set out in this bylaw, which is calculated starting from the lowest level of the building;
 - b) the area used or intended to be used for required Bicycle Parking, Long-Term, as set out in this bylaw, which is calculated starting from the lowest level of the building;
 - c) the area or areas of balconies, exposed decks, patios or roofs; and
 - d) the area of elevator shafts.”



- “Floor Space Ratio” means the ratio of the total floor area of a building to the area of the lot on which it is situated.



- “Total Floor Area” means the sum of the areas of all floors of a building or buildings, excluding floor space under a ceiling which is less than 1.8m above grade.