

GENERAL SERVICES ADMINISTRATION

PUBLIC BUILDINGS SERVICE

**How to use
ANSI's Space
Measurement
Standard
in PBS Facilities**

OVERVIEW OF METHOD

NOTE: The following method for calculating PBS space is based on a modified application of the true ANSI standard. The main difference between the PBS implementation and the ANSI standard is that for the purpose of calculating a tenant's Rentable square footage, the ANSI standard differentiates between Floor Common space and Building Common space. The PBS implementation of the ANSI standard does not differentiate between the two by categorizing all common area as Building Common. This Building Common is distributed on a pro rata basis to the tenants by the use of the Common Area Factor.

This method outlines the basic concepts of how the numbers for a building are put together.

Properly classify every space in the building in accordance with the SPACE TYPE, SPACE CATEGORY and ANSI CATEGORY as contained in the PBS Assignment Drawing Guidance Handbook. This handbook gives detailed instructions on how to properly identify and classify PBS space.

Determine the **DESIGN GROSS** square footage of the building. This will be the sum of all space types in the building. NOTE: In Federal Buildings and Lease buildings where the government is the sole tenant, this will be the total construction area. In lease facilities where the government is partial tenant, the Design Gross will be the occupied portion plus the pro rated share of the common and non-assignable space.

Calculate the **NON-ASSIGNABLE** area of the building. This is accomplished by measuring¹ and summing the Non-Assignable space types for every floor.

Calculate the **ANSI USABLE** area of the building. This is accomplished by measuring¹ and summing the Assignable space types (including Joint Use space) for every floor.

Calculate the **BUILDING COMMON** area of the building. This is accomplished by measuring¹ and summing the Common Area space types for every floor. NOTE: The Spatial Data Validation project, that PBS is currently engaged in, differentiates common areas in a building between ANSI's Building Common and Floor Common. For the purposes of billing, these are added together and labeled Building Common.

Calculate the **ANSI RENTABLE** square footage of the building by adding the ANSI Usable total and the Building Common total together.

Calculate the **COMMON AREA FACTOR** for the building. This is done by dividing the ANSI Rentable square footage by the ANSI Usable square footage.

¹ All measurements shall be in accordance with the ANSI Standard as it relates to FINISHED SURFACES and DOMINANT PORTION.

A QUICK NOTE ABOUT PBS REAL PROPERTY IT SYSTEMS

PBS has two information technology systems for managing real property spatial data. They are FIS (Facility Information System) and STAR (System for Tracking and Administering Real-property). Each system performs different functions yet share many of the same data elements. FIS is the repository of the spatial data that has been collected from the Spatial Data Validation (SDV) Project. The SDV project consisted of field verifying PBS space and measuring it in accordance with true ANSI dimensions. The data that is currently contained in STAR was migrated from a legacy system and based upon the old PBS Occupiable measurement standard. The data in FIS will be migrated to STAR so that STAR more accurately reflects facilities in accordance with ANSI.

BUILDING DESIGN GROSS

Definition: **The total construction area of the building**

This is used for: **Measuring building value**

Measuring building costs

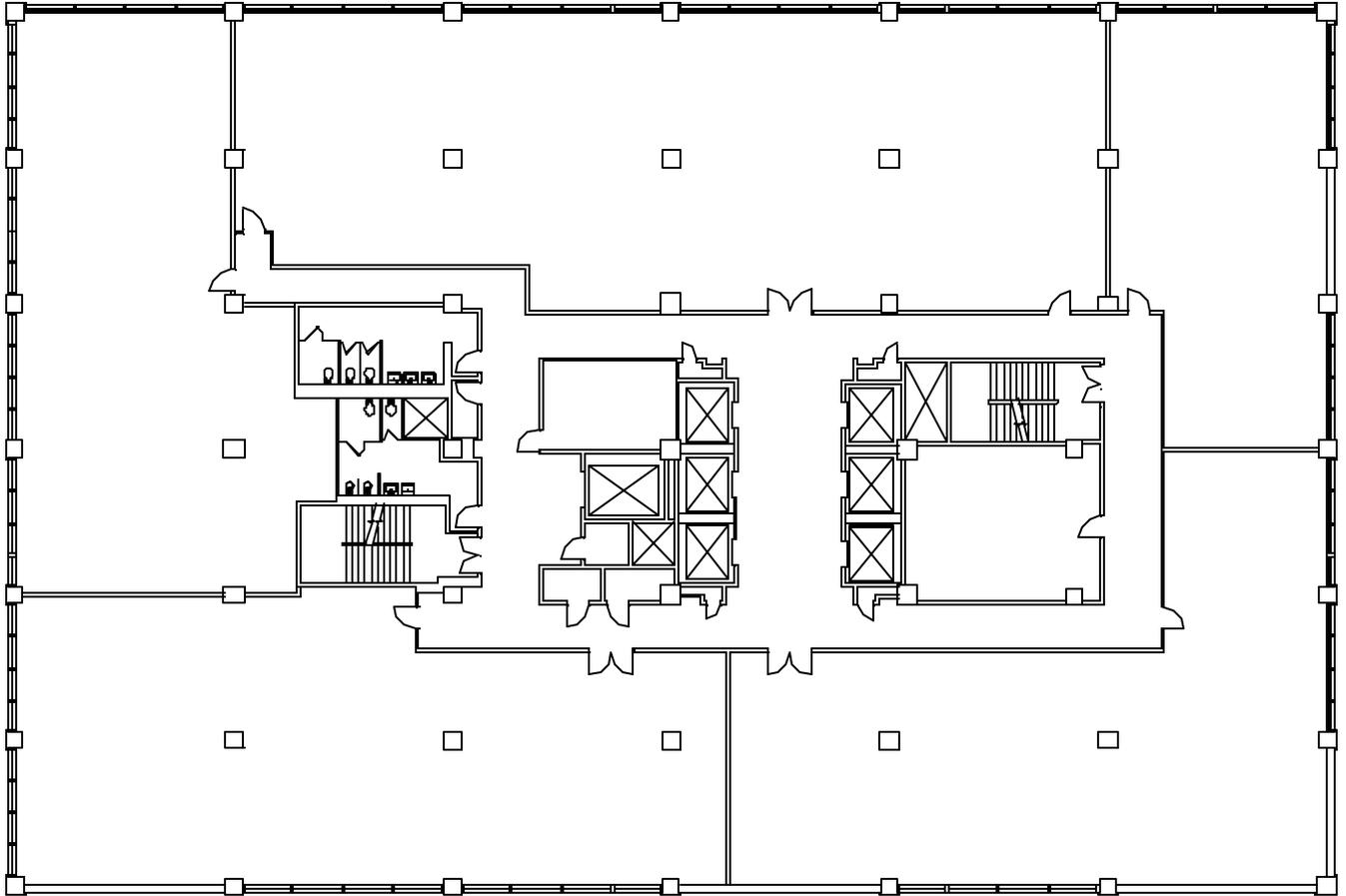
Calculation: **Measure to the outside finished surface**

Add sum of all enclosed floors including:

- **Basements and sub-basements**
- **Mechanical equipment floors**
- **Penthouses**

Space Types: **All**

BUILDING DESIGN GROSS



NON-ASSIGNABLE SPACE

Definition: The sum of all space that is not assigned to specific tenants and not considered Common Area.

This is used for: Calculating the residual space difference between Rentable and Design Gross.

Calculation: Sum of Measured Structured Parking Square footage and Unmarketable space types.

Space Types: Structured Parking (STP)
Circulation Vertical (CRV)
Construction (CON)

NOTE: In the ANSI standard, vertical penetrations are spaces such as stairs, elevator shafts, flues, pipe shafts, vertical ducts and the like, and their enclosing walls. Atria, lightwells and similar penetrations above the finished floor are included. These are designated with the PBS type, Circulation Vertical (CRV). For the space to be designated as a vertical penetration, it must be large enough for a person to fit comfortably through the penetration (around nine sq. ft.)

Vertical penetrations built for the private use of a tenant are classified as Usable space and shall be designated with the PBS space type Tenant Floor Cut (TFC). Examples of this space included auditoriums, communicating stairs, private elevators and double-height courtroom space. In the case of courtroom space, this only applies to courtrooms that actually have floor penetrations. If the buildings was constructed with monumental floor heights, these do not apply.

Construction (CON) is that space which makes up the outer wall (shell) of the building not included in the Dominant Portion.

MAJOR VERTICLE PENETRATIONS

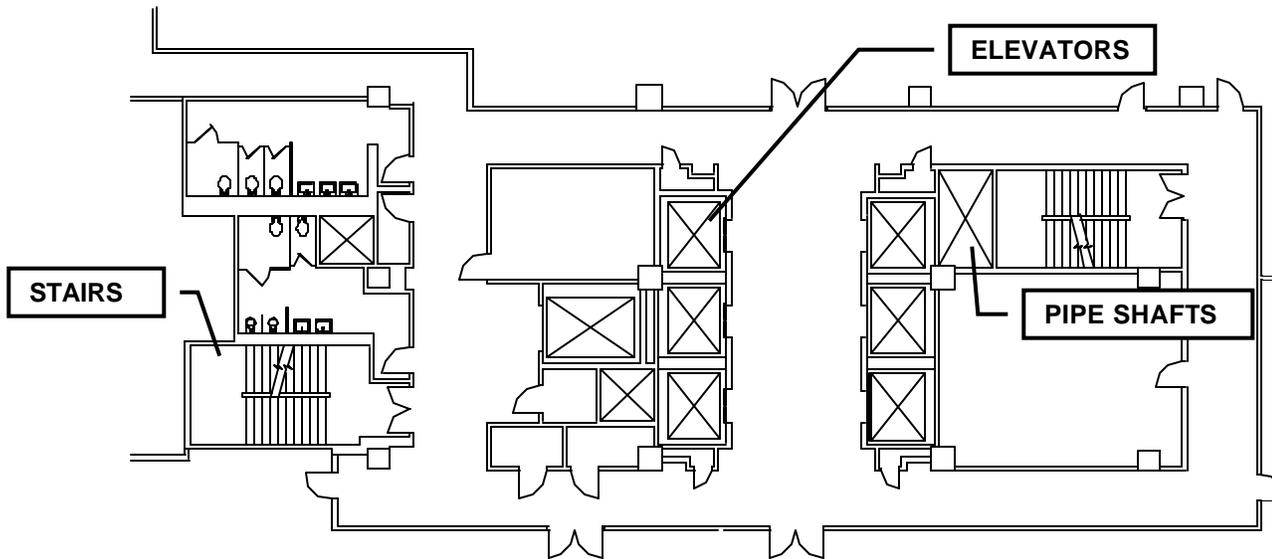


Illustration of MAJOR VERTICAL PENETRATIONS for a floor

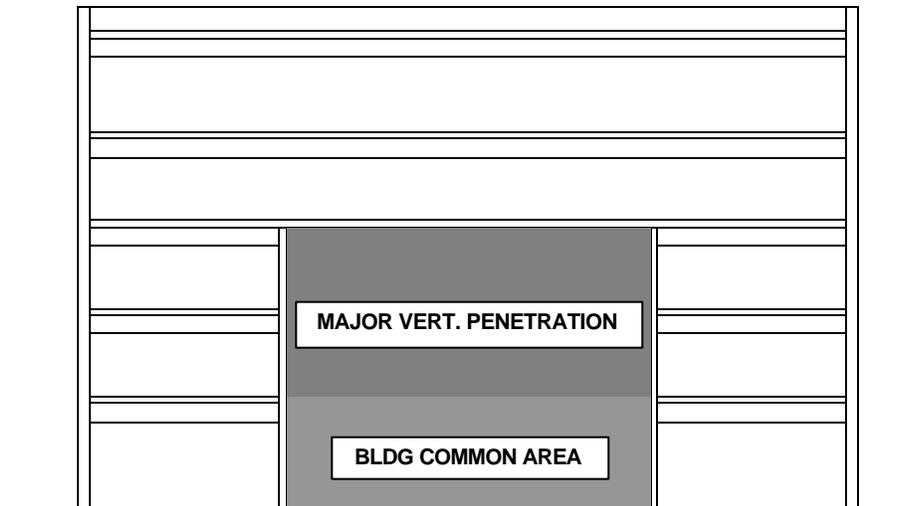
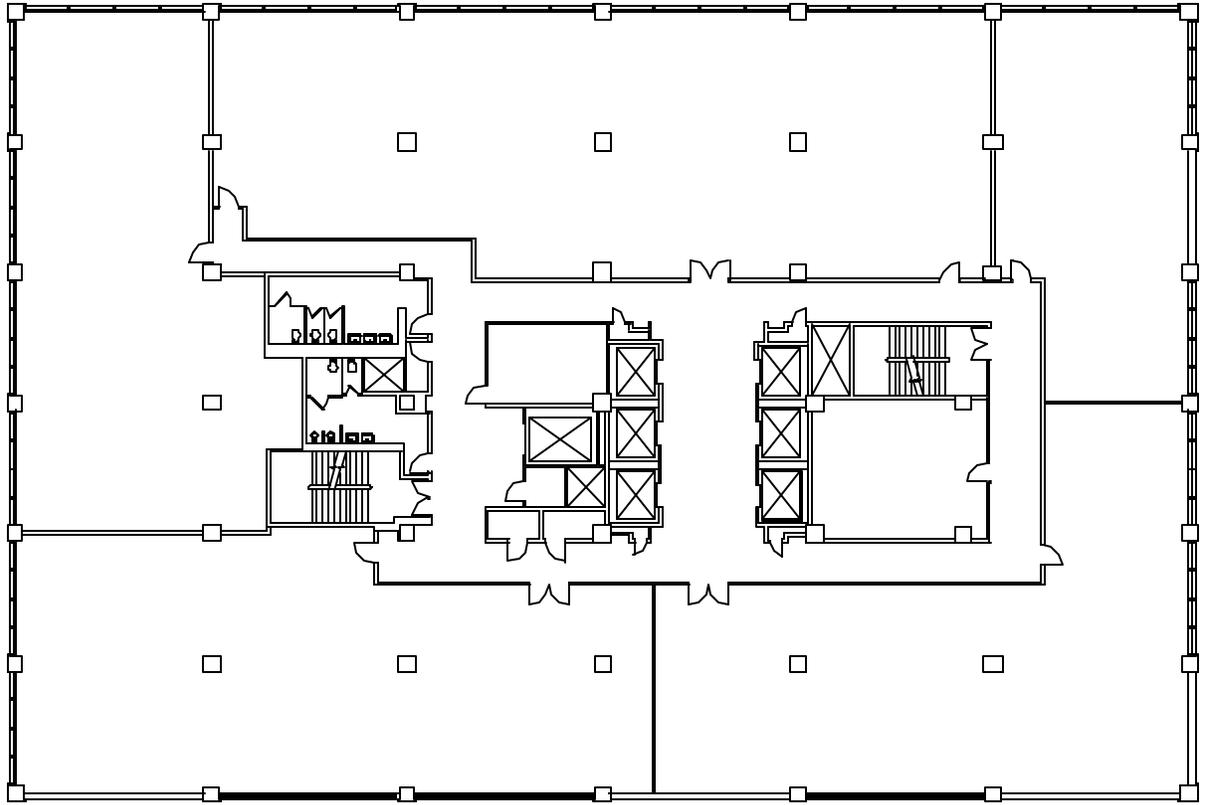


Illustration of MAJOR VERTICAL PENETRATION and BUILDING COMMON for a typical atrium condition.

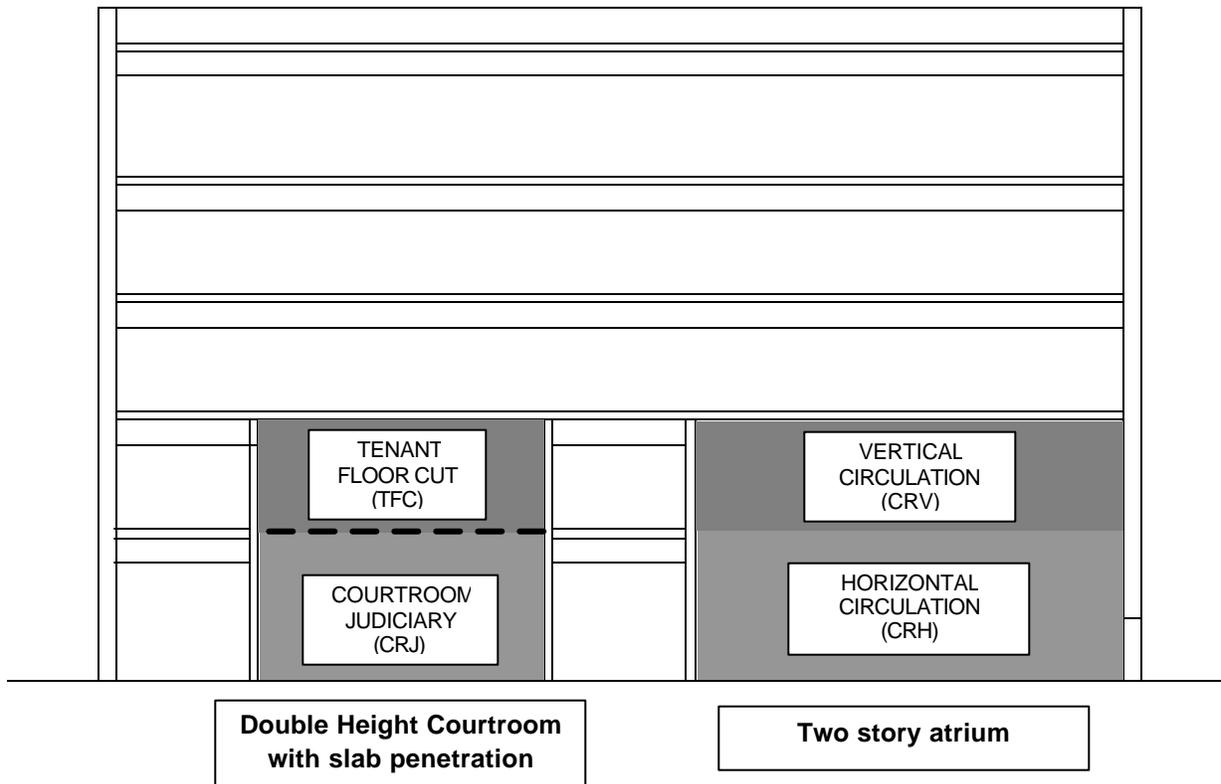
ANSI USABLE

Definition:	Area where tenant normally houses personnel and/or furniture, for which a measurement is to be computed.
This is used for:	Calculating the space that is occupied by tenants. A factor in calculating the tenant's Rentable square footage.
Calculation:	Sum of all Measured Assignable and Joint Use space types.
Space Types:	Automated Data Processing (ADP) Auditorium (AUD) Cafeteria (CAF) Conference/Training (CFT) Child Care (CLD) Courtrooms/Judiciary (CRJ) Double Height Space (DHS) Food Service (FDS) Fitness Center (FIT) General Storage (GNS) Health Unit (HUT) Light Industrial (INS) Judge's Chambers US Courts (JCC) Judicial Hearing Room (JHR) Laboratory (LAB) Other (OTH) Quarters & Residence (QRR) Snack Bar (SNK) Structurally Changed (STC) Tenant Floor Cut (TFC) Total Office (TTO) Warehouse (WRH)

ANSI USABLE



VERTICAL PENETRATION AS USABLE SPACE



The illustration above shows a condition where vertical penetrations in a building are treated differently. The atrium space at the lowest level is treated as Building Common and classified as CRH. The upper is treated as Major Vertical Penetration and classified as CRV. The upper portion is not considered Rentable space.

The lower area of the courtroom is classified as CRJ. The upper portion is a vertical penetration that was required by a specific tenant. This space will be included in the tenant's usable area. It will be classified as TFC and assigned to the courts.

BUILDING COMMON

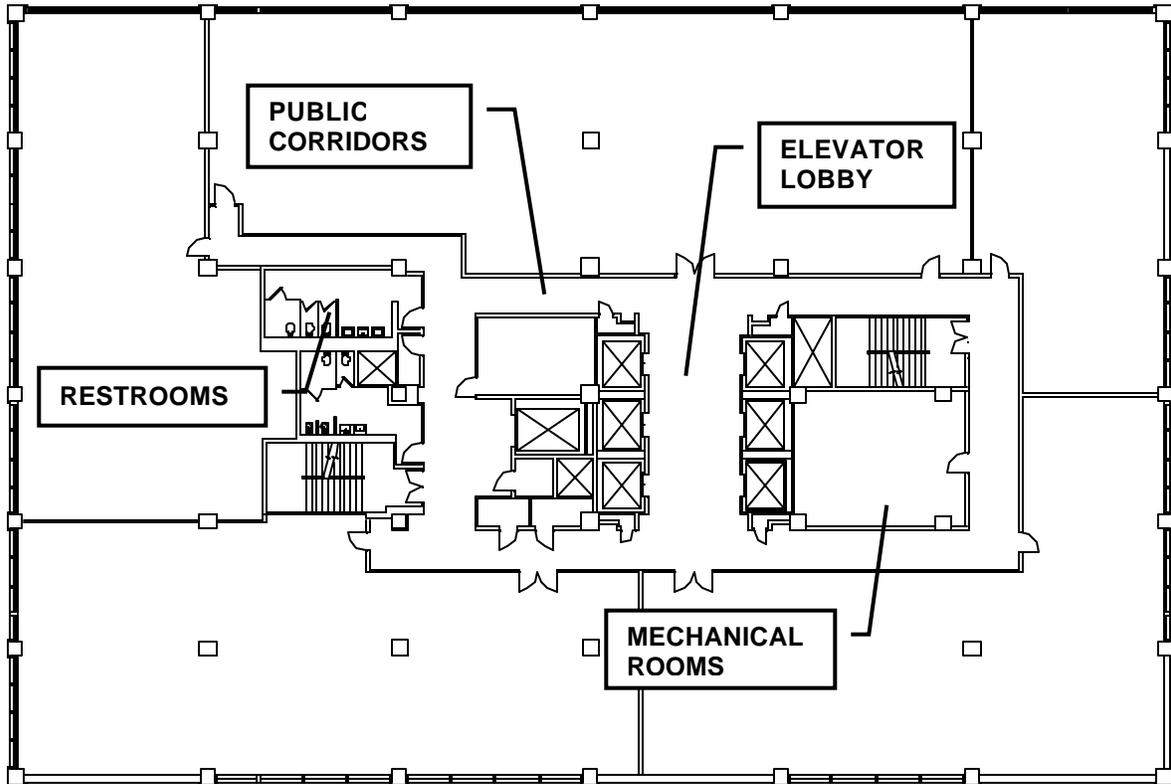
Definition: Areas in a building that provide utility and service to all tenants and are not considered Joint Use. These include mechanical, custodial, horizontal circulation and rest rooms.

This is used for: A factor in calculating the tenant's Rentable square footage.

Calculation: Sum of all Measured Common Area space types.

Space Types: Circulation Horizontal (CRH)
Mechanical (MCH)
Toilets (TLT)
Custodial (CST)

BUILDING COMMON



ANSI RENTABLE

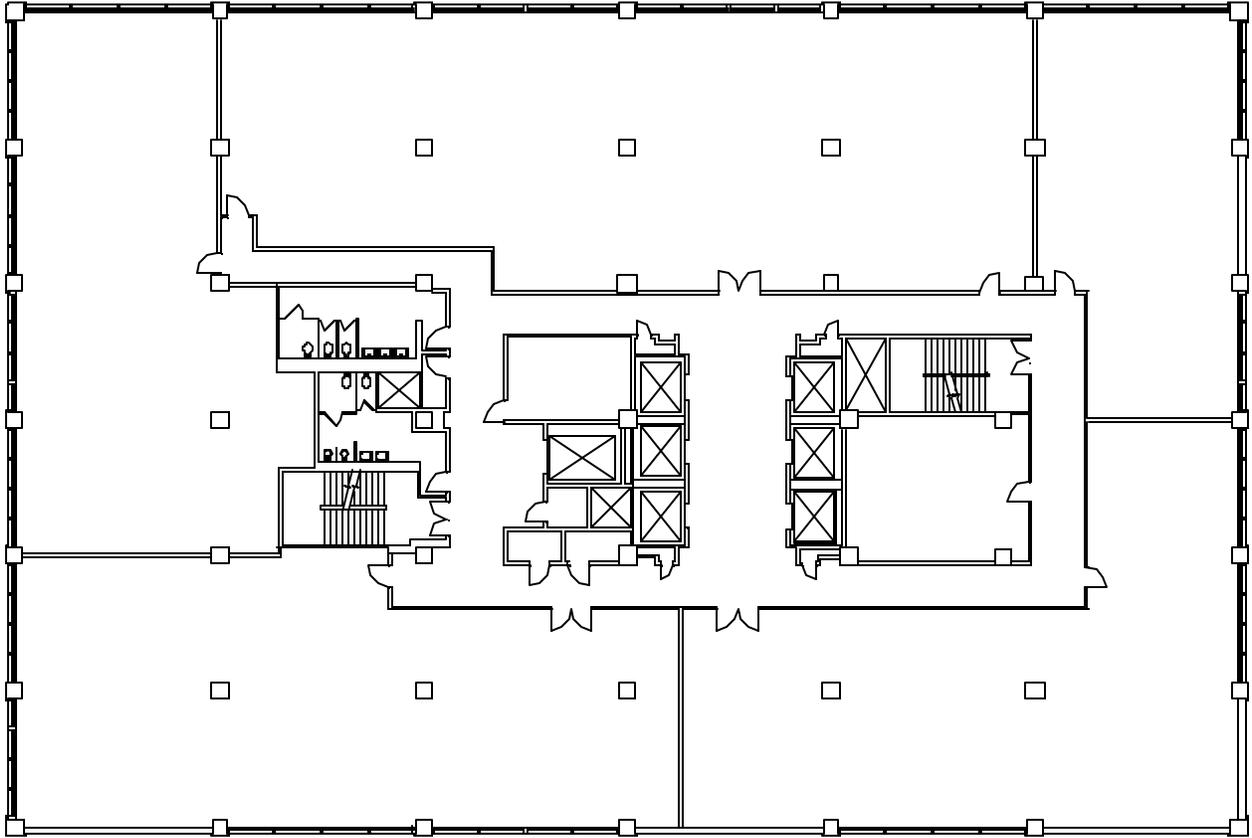
Definition: The space in a building that can actually be billed for.

This is used for: The basis on which a client is billed

Calculation: Sum of ANSI Usable and Building Common square footages.

Space Types: All, except Structured Parking and Unmarketable Space types.

ANSI RENTABLE



COMMON AREA FACTOR

Definition: Ratio of Rentable square footage to Usable square footage.

This is used for: Distribution of Building Common area on a pro rata basis to the tenants in a building.

Calculation: Divide the ANSI Rentable square footage by the ANSI Usable square footage.

SAMPLE BUILDING CALCULATION

Measured Usable Space	508,332	
Measured Joint Use Space	21,746	
Total <u>ANSI USABLE</u>	530,078	A
Total Measured <u>BUILDING COMMON</u>	131,101	B
<u>ANSI RENTABLE</u>	661,179	C = A+B
Total Measured <u>NON-ASSIGNABLE</u>	91,558	D
<u>DESIGN GROSS</u>	752,737	C+D

COMMON AREA FACTOR = C divided by A

$$661,179 / 530,078 = 1.24732$$

All of these basic totals and calculations can be seen in the STAR Building Details screen.

The screenshot shows the 'Building Details' window for building TX0224. The interface includes the following sections:

- Correspondence Symbol:** Building: 7P00, Space: 7P00
- Occup Right:** 1. FEDERAL OWNED
- Building Class:** GOVT OWNED OFFICE OVER 600K SQI
- Property Type:** OFFICE BLDG
- Predom Use:** GENERAL
- Facility Code:** (empty)
- Total Personnel:** 1,970
- Cad Link:** Radio buttons for No (selected) and Yes
- Status:** ACTIVE
- Common Area Factor:** 1.24732 (with a Refresh button)
- Building SQFT:**
 - Design Gross: 752,737
 - Gross: 752,737
 - Space In Progress: 0
 - ANSI Rentable: 661,179
 - ANSI Usable: 530,078
 - Building Joint Use: 21,746
 - Land (Acres): 0.00
 - Non Assignable: 91,558
 - Lease Common: 0
 - Building Common: 131,101
 - Facility Joint Use: 0
 - Lease Joint Use: 0
- Parking (Spaces):**
 - Inside Structured: 138
 - Pending Inside Structured: 0
 - Outside Surface: 0
 - Pending Outside Surface: 0
 - Total Parking: 138

SAMPLE TENANT CALCULATION

From the building example above, Tenant XYZ occupies the following spaces:

<u>Space Type</u>	<u>Sq. Ft.</u>
Total Office (TTO)	12,000
General Storage (GNS)	500
Data Processing (ADP)	1000
Conference/Training (CFT)	1000
Food Service (FDS)	500
Space Total	15,000 square feet

To calculate the tenants total space:

ANSI Usable = 15,000

Common Area Factor = 1.24732

ANSI Rentable = 15,000 X 1.24732 = **18,709.8 square feet**

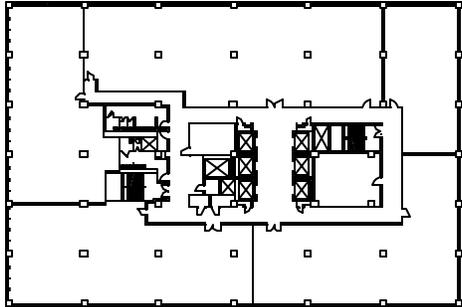
The tenant's Rentable share of Joint Use space =

$$\left[\frac{\text{Tenant ANSI Usable}}{\text{(Bldg. ANSI Usable - Joint Use)}} \times \text{Joint Use Total} \right] \times \text{Common Area Factor}$$

$$\left[\frac{15,000}{530,078 - 21,746} \times 21,746 \right] \times 1.24732 = \mathbf{816 \text{ Square Feet}}$$

Tenant's Total Rentable Space = 18,710 + 816 = 19,526 Square Feet

SAMPLE TENANT CALCULATION



Tenant's Usable Space

$$\begin{array}{l} \mathbf{X} \\ \text{COMMON} \\ \text{AREA} \\ \text{FACTOR} \end{array} + \begin{array}{l} \text{Pro Rated} \\ \text{Share of} \\ \text{Joint Use} \\ \text{Space} \\ \text{(Rentable)} \end{array} = \begin{array}{l} \text{Tenant's} \\ \text{Total} \\ \text{Rentable} \\ \text{Space} \end{array}$$