7. Benchmarking methodology for energy and water

Any new building assessed using the new online portal will be assessed for energy and water consumption using the ENERGY STAR Portfolio Manager (ESPM) benchmarking methodology. There are three performance metrics in the BOMA BEST Sustainable Buildings 3.0 assessment. None is required to obtain a certification although additional points may be earned for participating.

Applicants may link up existing ESPM accounts with the online portal – this way there is no need to enter consumption data again. Instructions on how to do this are provided **here**.

Applicants that do not have an ESPM account can use the online portal to capture their consumption data. Instructions on how to do this are provided **here**.

An **ESPM Guidebook** has been prepared to assist applicants who have additional questions regarding the energy and water benchmarking.

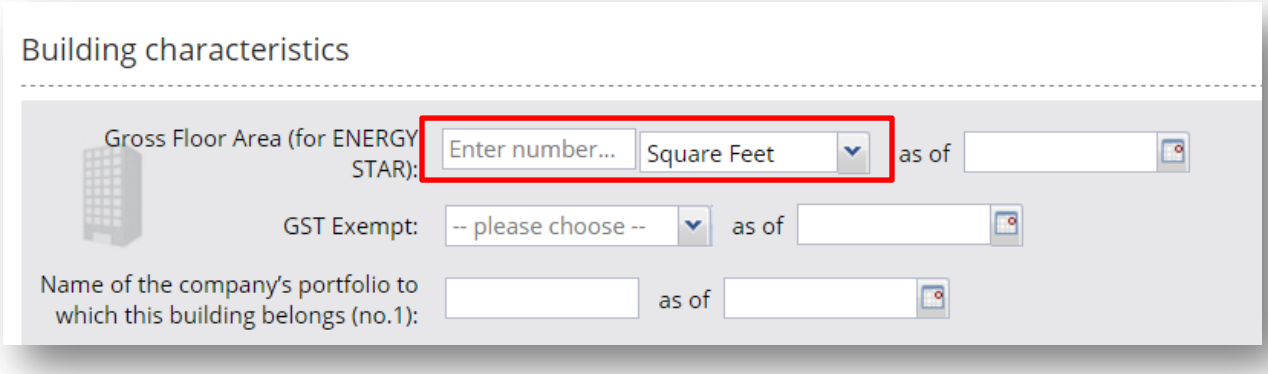
7.1. Office, Enclosed Shopping Centre, Light Industrial, Open Air Retail, and Universal

7.1.1. Gross Floor Area

BOMA BEST performance metrics are dependent on an accurate gross floor area (GFA). For the purposes of benchmarking performances, BOMA BEST is aligned with the ENERGY STAR Portfolio Manager definition of the Gross Floor Area. This definition is different from the area required to calculate the BOMA BEST application fees (see Section 4 of this Guide for more details on this).

a) For Office and Universal (ENERGY STAR Score eligible) buildings

The GFA that used for the purposes of calculating the energy and water performance must be entered here on the building registration page ("Create New" page - under "Fill in more details"):



The GFA used for calculating energy or water performance **must** include the following spaces:

- Lobbies
- Tenant Areas
- Common Areas
- Meeting Rooms
- Break Rooms

- Atriums (ground floor only)
- Restrooms
- Elevator Shafts
- Stairwells
- Mechanical Equipment Areas
- Basements
- Storage Rooms
- Indoor/underground parking (depends on whether it is sub-metered – see notes below for more details)

Areas that that **must not** be included in the floor area:

- Exterior spaces
- Balconies
- Patios
- Exterior Loading Docks
- Driveways
- Covered Walkways
- Outdoor Courts (Tennis, Basketball, etc.)
- The interstitial plenum space between floors (which house pipes and ventilation)
- Crawl Spaces
- Exterior parking/Parkades

Indoor and Underground Parking: The above list is identical to the areas required to calculate BOMA BEST Fees **except** for parking areas. Indoor and underground parking areas must be included in the GFA to calculate fees. However, the decision to include this area in the GFA used to benchmark performance depends on whether the space is sub-metered.

- If energy for the parking area is **sub-metered**, the floor area should not be included in the GFA. In such cases, energy consumption from the indoor parking area must also be **excluded** from the energy consumption data entered.
- If the parking area is **not sub-metered**, the floor area must be included in the GFA for benchmarking purposes. It follows that the energy consumption associated with this area will already be included in the total energy consumption data entered for the building.

b) Enclosed Shopping Centres, Open Air Retail, Light Industrial, Universal (non-ENERGY STAR Score eligible) buildings

As much as possible, respect the rules listed above for Office etc. However, if the surface areas of all the spaces listed above are not known, include whatever is known in the ENERGY STAR GFA field.

Please note that in the future, these buildings will be required to provide a GFA based on the rules outlined in 7.1.1 a).

7.1.2. ENERGY STAR Score

Energy performance for Office buildings and eligible Universal buildings is assessed using the ENERGY STAR Score – a score from 1 to 100.

Buildings that earn a score between 1 and 100 are compared to other buildings nationwide that have the same primary use. In addition to this, the ENERGY STAR Score also normalizes for building characteristics such as weather, occupancy hours, and number of full-time workers.

ENERGY STAR Score Benchmarking Scale for Office and eligible Universal buildings

ENERGY STAR Score Benchmarking Matrix – Office and eligible Universal buildings	
ENERGY STAR Score	Points
Unknown	0
0-49	0
50	10
51-100	2 points are earned for every ENERGY STAR Score above 50, up to **90** points. E.g. ENERGY STAR Score of 73 = 56 points

7.1.3. Energy Use Intensity (EUI)

In all asset classes, applicants are requested to provide their Energy Use Intensity. This metric is not scored specifically though points may be earned (depending on the asset class) for being able to calculate a valid EUI. The intent is to encourage participants to benchmark energy consumption over time.

In order to obtain a weather-normalized site EUI, applicants must provide energy consumption data representing all required spaces in the building for a period of **24** consecutive months. See sub-section 7.1.1 for instructions on how to proceed if there is indoor parking.

7.1.4. Water Use Intensity (WUI)

In all asset classes, applicants are requested to provide their Water Use Intensity. For Office buildings, depending on the performance, applicants will obtain points. In the remaining asset classes, simply providing a valid WUI (regardless of the value) may be sufficient for obtaining points. The intent is to encourage participants to benchmark energy consumption over time.

This metric is not scored specifically though points may be earned (depending on the asset class) for being able to calculate a valid WUI.

In order to obtain a WUI, applicants must provide water consumption data representing all spaces in the building (exceptions can be made depending on the asset class) for a period of **12** consecutive months.

Water used for irrigation must be included.

Water Use Intensity Benchmarking Scale (Office Only)

Water Benchmarking Matrix – Office	
Water Use Intensity	Points
Unknown / Unable to obtain	0
1.0 m^3/m^2/year and above	0
Between 0.8 and 0.99 m^3/m^2/year	4
Between 0.65 and 0.79 m^3/m^2/year	6
Between 0.50 and 0.64 m^3/m^2/year	8
Between 0.33 and 0.49 m^3/m^2/year	10
Between 0.2 and 0.32 m^3/m^2/year	12
Less than 0.2 m^3/m^2/year	15

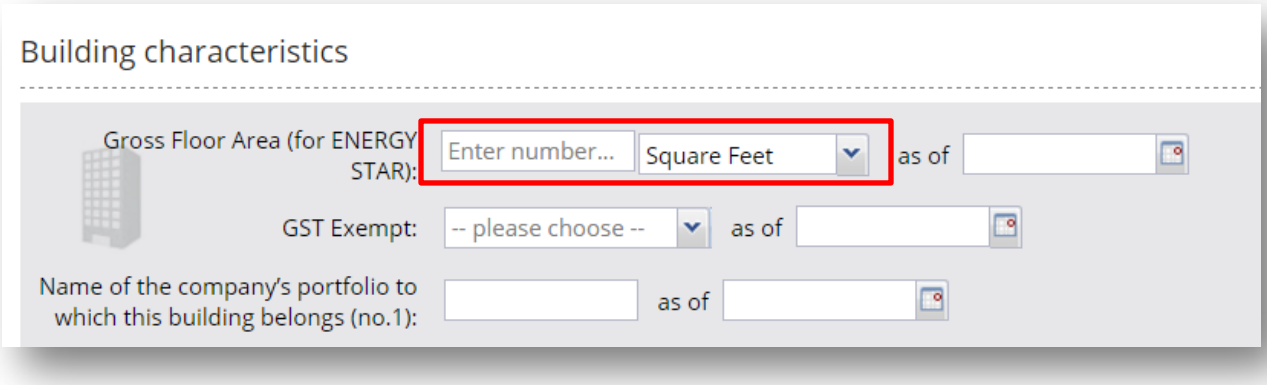
7.2. MURB and Health Care Facilities

Similarly to the other asset classes, when applicants assess their buildings using the MURB or Health Care questionnaires on the new portal they will be accessing the ENERGY STAR Methodology. However, performance is rewarded slightly differently.

7.2.1. Gross Floor Area

BOMA BEST performance metrics are dependent on an accurate gross floor area (GFA). For the purposes of benchmarking performances, BOMA BEST is aligned with the ENERGY STAR Portfolio Manager definition of the Gross Floor Area. This definition is different from the area required to calculate the BOMA BEST application fees (see Section 4 of this Guide for more details on this).

The GFA that used for the purposes of calculating the energy and water performance must be entered here on the building registration page ("Create New" page - under "Fill in more details"):



The GFA used for calculating energy or water performance **must** include the following spaces:

- Lobbies
- Tenant Areas
- Common Areas
- Meeting Rooms
- Break Rooms
- Atriums (ground floor only)
- Restrooms
- Elevator Shafts
- Stairwells
- Mechanical Equipment Areas
- Basements
- Storage Rooms
- Indoor/underground parking (depends on whether it is sub-metered – see notes below for more details)

Areas that that **must not** be included in the floor area:

- Exterior spaces
- Balconies

- Patios
- Exterior Loading Docks
- Driveways
- Covered Walkways
- Outdoor Courts (Tennis, Basketball, etc.)
- The interstitial plenum space between floors (which house pipes and ventilation)
- Crawl Spaces
- Exterior parking/Parkades

Indoor and Underground Parking: The above list is identical to the areas required to calculate BOMA BEST Fees **except** for parking areas. Indoor and underground parking areas must be included in the GFA to calculate fees. However, the decision to include this area in the GFA used to benchmark performance depends on whether the space is sub-metered.

- If energy for the parking area is **sub-metered**, the floor area should not be included in the GFA. In such cases, energy consumption from the indoor parking area must also be **excluded** from the energy consumption data entered.
- If the parking area is **not sub-metered**, the floor area must be included in the GFA for benchmarking purposes. It follows that the energy consumption associated with this area will already be included in the total energy consumption data entered for the building.

7.2.2. Energy for MURB

In order to obtain a weather-normalized site Energy Use Intensity (EUI), applicants must provide energy consumption data representing all required spaces in the building for a period of **24** consecutive months. See sub-section 7.2.1 for instructions on how to proceed if there is indoor parking.

Based on the EUI generated on the new online portal, applicants will receive points based on the following benchmarking scale:

Energy Benchmarking Matrix – Multi-Unit Residential Buildings	
Energy Use Intensity	Points
< 23 ekWh/ft²/yr	8
< 22 ekWh/ft²/yr	16
< 21 ekWh/ft²/yr	24
< 20 ekWh/ft²/yr	32
< 19 ekWh/ft²/yr	40
< 18 ekWh/ft²/yr	48
< 17 ekWh/ft²/yr	56
< 16 ekWh/ft²/yr	64
< 15 ekWh/ft²/yr	72
< 14 ekWh/ft²/yr	80

7.2.3. Water for MURB

In order to obtain a Water Use Intensity (WUI), applicants must provide water consumption data representing all required spaces in the building for a period of **12** consecutive months. Water used for irrigation must be included.

Based on WUI generated on the new online portal, applicants will receive points based on the following benchmarking scale:

Water Benchmarking Matrix – Multi-Unit Residential Buildings	
Water Use Intensity	Points
< 8.03 $m^3/m^2/yr$	18
< 6.205 $m^3/m^2/yr$	24
< 5.475 $m^3/m^2/yr$	30

7.2.4. Energy for Health Care

In order to obtain a weather-normalized site Energy Use Intensity (EUI), applicants must provide energy consumption data representing all required spaces in the building for a period of **24** consecutive months. See sub-section 7.2.1 for instructions on how to proceed if there is indoor parking.

Based on the EUI generated on the new online portal, applicants will receive points based on the following benchmarking scale:

Energy Benchmarking Matrix – Hospitals	
Energy Use Intensity	Points
< 80 ekWh/ft²/yr	7
< 76 ekWh/ft²/yr	14
< 72 ekWh/ft²/yr	21
< 68 ekWh/ft²/yr	28
< 64 ekWh/ft²/yr	35
< 60 ekWh/ft²/yr	42
< 56 ekWh/ft²/yr	49
< 52 ekWh/ft²/yr	56
< 48 ekWh/ft²/yr	63
< 44 ekWh/ft²/yr	70

Energy Benchmarking Matrix – Medical Offices	
Energy Use Intensity	Points
< 34 ekWh/ft²/yr	7
< 32 ekWh/ft²/yr	14
< 30 ekWh/ft²/yr	21
< 27 ekWh/ft²/yr	28
< 24 ekWh/ft²/yr	35
< 21 ekWh/ft²/yr	42
< 18 ekWh/ft²/yr	49
< 15 ekWh/ft²/yr	56
< 12 ekWh/ft²/yr	63
< 9 ekWh/ft²/yr	70

Energy Benchmarking Matrix – Long Term Care	
Energy Use Intensity	Points
< 59 ekWh/ft²/yr	7
< 54 ekWh/ft²/yr	14
< 51 ekWh/ft²/yr	21
< 48 ekWh/ft²/yr	28
< 45 ekWh/ft²/yr	35
< 42 ekWh/ft²/yr	42
< 39 ekWh/ft²/yr	49
< 36 ekWh/ft²/yr	56
< 33 ekWh/ft²/yr	63
< 30 ekWh/ft²/yr	70

7.2.5. Water for Health Care

In order to obtain a Water Use Intensity (WUI), applicants must provide water consumption data representing all required spaces in the building for a period of **12** consecutive months. Water used for irrigation must be included.

Based on WUI generated on the new online portal, applicants will receive points based on the following benchmarking scale:

Water Benchmarking Matrix – Health Care Facilities				
	Hospital	Medical Office	Long Term Care	Points
<	3.0 $m^3/m^2/yr$	1.6 $m^3/m^2/yr$	1.9 $m^3/m^2/yr$	5
<	2.6 $m^3/m^2/yr$	1.4 $m^3/m^2/yr$	1.7 $m^3/m^2/yr$	10
<	2.2 $m^3/m^2/yr$	1.2 $m^3/m^2/yr$	1.3 $m^3/m^2/yr$	15
<	1.7 $m^3/m^2/yr$	1.0 $m^3/m^2/yr$	1.1 $m^3/m^2/yr$	20
<	1.3 $m^3/m^2/yr$	0.8 $m^3/m^2/yr$	0.9 $m^3/m^2/yr$	25
<	0.9 $m^3/m^2/yr$	0.5 $m^3/m^2/yr$	0.6 $m^3/m^2/yr$	30