



APPLICATION FOR APPROVAL OF DESIGN SCORE FOR BUILDING UNDERGOING MAJOR ENERGY-USE CHANGE

[Section 22FB of the Building Control Act (Cap.29)]

Date:

To:

Building and Construction Authority



Commissioner of Building Control
Building and Construction Authority
52 Jurong Gateway Road, #11-01
Singapore 608550
Website: <http://www.bca.gov.sg>

Instructions

1. This form may be submitted electronically.
 - a. All electronic submissions are to be digitally signed by the appointed Professional Engineer(Mech).
 - b. GFA for the respective building type shall be input with reference to URA Written Permission.
2. This form may take 5-10 mins to complete.

Application Type*

1. Application for Approval of Design Score for Building Undergoing Major Energy-Use Change

I. Code for Environmental Sustainability Measures for Existing Buildings (Edition 3.0)

☐

2. Application for Approval of Completion of Major Energy-Use Change and Submission of As-Built Score

I. Code for Environmental Sustainability Measures for Existing Buildings (Edition 2.0)

☐

II. Code for Environmental Sustainability Measures for Existing Buildings (Edition 3.0)

☐

Particulars of Application

Project Reference Number

Building Name* *

Block Number*

Road Name* *

Postal Code*

Building Sector*

Private / Public

Building Age*

years

☐ Single-Used

☐ Mixed-Used

Building Type*

GFA(m²)*

Others

Residential

Total:

*For mixed development, fill in the areas for the respective building type.

Section I Particulars of Building Owner(s)/Management Corporation

Name*

Management Corporation

Company Name

UEN

Designation

Address

Telephone No.

Handphone No.

Email Address

Section II Particulars of Professional Engineer (Mech)

Name*

Professional Engineer

Registration No.

Firm Name

UEN*

Address

Telephone No.

Handphone No.

Email Address

Declaration by Mechanical Engineer

- 11.1. I, confirm that I have been appointed under Section 22FB of the Act as the Mechanical Engineer in respect of the works herein described.* ☐
- 11.2. I, hereby confirm that the notification of appointment/authorization form titled 'BCA-EB-NAPPE01' is duly signed by the relevant parties and attached to this application.* ☐
- 11.3. I, certify that I have prepared the works shown in the plans and assessed the design score submitted with this application and I hereby declare that the said works and design score meet the minimum environmental sustainability standard applicable to the building subject to such waiver/ modification granted under Section 22FB(5) of the Act and are in accordance with the Act and the Building Control (Environmental Sustainability Measures for Existing Buildings) Regulations 2013.* ☐
- 11.4. I, hereby declare that the particulars provided in this application and the attached forms/documents are correct.* ☐

Section III Submission Details

Age of building cooling system before retrofit*

years

Expected date of commencement of retrofitting works*

Expected Completion Date*

Building Cooling Load Details*

☐ Audited

☐ Designed

Building Energy Consumption Prior to Retrofit

kWh/yr

Building Energy Consumption after Retrofit (Estimated)

kWh/yr

(a) Current Building Cooling System Details

- ☐ Unitary System - Split Systems / Variable Refrigerant Flow / Packaged Units

Description of air-conditioning system

Air-Con area served by unitary system

 m²

Total Installed Cooling Capacity

 RT kW

Total System Efficiency

 kW/RT COP

☐ **Chiller Plant System**

☐ Air-Cooled ☐ Water-Cooled

Chiller Plant Configuration

Air-Con area served by chiller plant system

 m²

Daytime average cooling load

 RT RT

Daytime average cooling load per
air-con area

 W/m² W/m²

Nighttime average cooling load

Nighttime average cooling load per
air-con area

Chiller
(kW/RT)

Chiller water
pump
(kW/RT)

Condenser
water pump
(kW/RT)

Cooling
Towers
(kW/RT)

Total System
(kW/RT)

| | | | | | | |
|------------------------------------|-----------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <input type="checkbox"/> 24 Hrs | Daytime | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| | Nighttime | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 24 hours Average | | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

(b) Proposed Building Cooling System Details

☐ **Unitary System - Split Systems / Variable Refrigerant Flow / Packaged Units**

Description of air-conditioning system

Air-Con area served by unitary system

 m²

Total Installed Cooling Capacity

 RT kW

Total System Efficiency

 kW/RT COP

☐ **Chiller Plant System**

☐ Air-Cooled ☐ Water-Cooled

Chiller Plant Configuration

Air-Con area served by chiller plant system

 m²

Daytime average cooling load

 RT

Nighttime average cooling load*

 RT

Daytime average cooling load per air-con area

 W/m²

Nighttime average cooling load per air-con area

 W/m²

| | | Chiller (kW/RT) | Chiller water pump (kW/RT) | Condenser water pump (kW/RT) | Cooling Towers (kW/RT) | Total System (kW/RT) | |
|------------------------------------|-----------|----------------------|----------------------------------|------------------------------------|------------------------------|-------------------------|--|
| <input type="checkbox"/> 24 Hrs | Daytime | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | |
| | Nighttime | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | |
| 24 hours Average | | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | |

Section IV Prerequisites And Options

I, confirm that the following requirements will be complied with in the As Built Submission.

ENRB01 Building Energy Performance

ENRB01-1 Whole Building Approach via Energy Audit

☐

ENRB01-2 System Level Approach via Enhanced Energy Performance Standards

☐

ENRB01-2(a) Air-Conditioning System

(i) Total System Efficiency for Water-Cooled Building Cooling System

☐

(ii) Total System Efficiency for Air-Cooled Building Cooling System

☐

ENRB01-2(b) Lighting System (lighting systems for all spaces, excluding tenanted area)

☐

ENRB01-2(c) Mechanical Ventilation System (for normally occupied spaces and carparks if there is a replacement)

☐

ENRB01-2(d) Vertical Transportation System (if there is a replacement)

☐

ENRB02 Measurement and Verification (M & V) Instrumentation*

☐

ENRB02-1 Instrumentation for Chilled Water Air-Conditioning System

☐

ENRB02-2 Instrumentation for Variable Refrigerant Flow (VRF) System

☐

ENRB03 Real-Time Remote Monitoring of Chiller Plant Operation*

☐

ENRB04 Energy Utilisation Reporting*

☐

| | |
|--|--------------------------|
| ENRB05 Indoor Temperature* | <input type="radio"/> |
| ENRB06 Indoor Air Quality (IAQ) Audit* | <input type="radio"/> |
| CARBON REDUCTION MEASURES | <input type="radio"/> |
| SECTION 1 - SUSTAINABLE FEATURES | |
| ENRBE01-1 Building Envelope Enhancement | <input type="checkbox"/> |
| ENRBE01-2 Naturally Ventilated Building Design | <input type="checkbox"/> |
| ENRBE01-3 Sustainable Products | <input type="checkbox"/> |
| SECTION 2 - SUSTAINABLE OPERATION AND MANAGEMENT* | |
| ENRBE02-1 Electrical Submetering | <input type="checkbox"/> |
| ENRBE02-2 Maintenance of Building Cooling System Performance | <input type="checkbox"/> |
| ENRBE02-3 User Engagement Plan | <input type="checkbox"/> |
| SECTION 3 - SUSTAINABLE TECHNOLOGIES | |
| ENRBE03-1 Renewable Energy System | <input type="checkbox"/> |
| ENRBE03-2 Smart Building Solutions | <input type="checkbox"/> |
| ENRBE03-3 Green Building Technologies | <input type="checkbox"/> |

For the full Compliance Methodology, please refer to the details provided in the Code on Environmental Sustainability Measures for Existing Building (Edition 3.0).

Section V Requirements and Submission Checklist

I, confirm that the following documents have been submitted along with this application

| | | |
|----|---|--------------------------|
| a) | Audit report on current air-conditioning system before retrofitting works is attached* (applicable to central chilled-water plant only) | <input type="checkbox"/> |
| b) | Cooling load calculations (if there is a change in cooling load or unitary air-conditioning systems installed) | <input type="checkbox"/> |
| c) | Design schematic drawing of proposed air-conditioning system (water-side) is attached* | <input type="checkbox"/> |
| d) | Chiller plant room layout drawing including position of M&V instruments using symbol and color scheme is attached* | <input type="checkbox"/> |
| e) | Chiller part-load performance data sheet from equipment supplier is attached* | <input type="checkbox"/> |
| f) | Chilled water pump selection data sheet and pump curves showing design flow and head, pump hydraulic efficiency, motor absorbed power and efficiency is attached* | <input type="checkbox"/> |
| g) | Condenser water pump selection data sheet and pump curves showing design flow and head, pump hydraulic efficiency, motor absorbed power and efficiency is attached* | <input type="checkbox"/> |
| h) | Cooling tower selection data sheet and location plans are attached* | <input type="checkbox"/> |

| | | |
|----|---|--------------------------|
| i) | Project schedule for retrofitting works is attached* | <input type="checkbox"/> |
| j) | Attach a excel worksheet for Total System Efficiency computation template as supporting document* | <input type="checkbox"/> |
| k) | Declaration of GFA with supporting documents* (e.g. URA document) | <input type="checkbox"/> |

Fee Computation for approval of Design score for Building Undergoing Major Energy-Use Change

Gross Floor Area (m²)

Computed Fees

Rates

\$8,900 for the first 15,000 m2 (or part thereof), and

\$0.15 for every subsequent m2 (or part thereof) of the gross floor area.

Total Plan Fee Payable

\$

Payment Mode

☐ Cheque (Not applicable)

Cheque No.

Bank Name

Cheque Date

Amount Paid

☐ ePayment

Please proceed to make ePayment after your e-Submission at

<http://www.bca.gov.sg/ePayment/ePayment.html>

☐ Paid Earlier

Payer's Detail:-

Name

Company Name

Email Address