

# What's New September 2018

## Contents

### Content Common to CAWS and BG 56 Based Specifications

- Section 1. Summary
- Section 2. Details of Work Section Updates & Audits
- Section 3. Schedules
- Section 4. Detail Changes to Reference Documents

A full record of the content revisions can be obtained within the report that is produced when you run the update routine on your user specifications.

Detailed PDF guidance documents can be found by clicking on the 'Sustainability' or 'Technical Design Guides' icons in the 'Guidance' toolbar.

Unless stated otherwise, section or clause guidance is accessed via the right-hand window.

### Content Common to CAWS and BG 56 Based Specifications

Section 1	Summary
Detailed Technical Guidance	<p><b>New or enhanced existing guidance:</b></p> <ul style="list-style-type: none"> <li>• New PDF document titled "h. BREEAM 2018 Changes Affecting NES", accessed via the 'Sustainability' tab under 'Guidance' within NES</li> <li>• Guidance regarding air filters updated/enhanced ref BS EN ISO 16890 <i>See Section 2 for details</i></li> </ul>
Work Section Updates	<p><b>Key points:</b></p> <ul style="list-style-type: none"> <li>• Clauses where BREEAM requirements can be specified have been updated in line with BREEAM UK New Construction Non-domestic Buildings 2018</li> <li>• WELL Building Standard requirements have been incorporated either into existing or new NES clauses</li> <li>• New Part 2 clause and rationalisation of reference clauses for stainless steel pipework</li> <li>• General update/audit of various AC and cooling sections regarding refrigerants and BS ISO's</li> <li>• Content/types of transfer grilles expanded and updated</li> <li>• Standards updated/added in catering equipment and gas supply sections</li> <li>• Control panel clauses in BMS sections enhanced and merged into a single clause. The self-contained Central Controls/BMS section has been audited and updated/consolidated to reduce the volume of detail</li> <li>• Clause content for secondary battery systems in various electrical systems updated</li> <li>• Standards in escalator/moving pavement sections updated</li> <li>• Various withdrawn boiler standards removed</li> <li>• Standards for calculation of air infiltration rates and energy losses due to ventilation, added to the general ventilation section <i>See Section 2 for further details and Section 3 for details of schedules</i></li> </ul>
Standards and Regulations Updates (only significant standards listed here)	<p><b>Some significant documents covered by the update include:</b></p> <ul style="list-style-type: none"> <li>• BREEAM UK New Construction Non-domestic Buildings 2018</li> <li>• WELL Building Standard v1</li> </ul> <p><b>Some significant standards covered by the update include:</b></p> <ul style="list-style-type: none"> <li>• Latest versions of BS EN 14511 for AC plant / chillers</li> <li>• Relevant parts of BS EN 62485 / BS EN IEC 62485 for safety requirements for secondary batteries</li> <li>• BS EN 16282 for components for ventilation in commercial kitchens</li> <li>• Relevant parts of BS EN 16798 for infiltration / ventilation calculations <i>See Section 4 for details of all changes to reference documents</i></li> </ul>

## Content Common to CAWS and BG 56 Based Specifications

### Section 2 Details of Work Section Updates & Audits

Refer to separate 'CAWS - BG 56 NES Master Content Reference Document' for details of the corresponding BG 56 part/section to the following CAWS section references.

#### The Well Building Standard

A framework of Well Building Standard requirements has been incorporated either into existing clauses or new NES clauses. The content is based on features in v1 of the standard. A full list of clauses containing reference to WELL Building Standard v1 requirements can be found at the end of this document.

The Well Standard is a performance-based system for measuring, certifying, and monitoring features of the built environment that impact human health and wellbeing, through air, water, nourishment, light, fitness, comfort and mind. It is a district-scale rating system that takes into account the interconnectivity between buildings and their surroundings and the overall impact on human health. The WELL Building Standard v1 and WELL Community Standard v1 are administered by International WELL Building Institute (IWBI).

A WELL v2 pilot was launched on 31.05.18 and once there has been some feedback from users and any teething issues resolved, NES plan to add a set of additional WELL v2 clauses to set alongside the v1 clauses / clause sections. WELL v1 is anticipated to be removed from NES in 2020.

#### BREEAM

The NES clauses where BREEAM requirements can be specified have been updated in line with BREEAM UK New Construction Non-domestic buildings 2018. The clauses however still contain BREEAM UK New Construction 2014 requirements for projects already started under this scheme. For details refer to the NES guidance PDF document titled "h. BREEAM 2018 Changes Affecting NES", accessed via the 'Sustainability' tab under 'Guidance' within NES. This document contains a table with all the BREEAM ID's, key changes for 2018 and potential NES sections. It also incorporates a listing of all NES clauses containing BREEAM requirements both in BSRIA BG 56 based format clauses and CAWS based format clauses.

#### Description of the Works and Common Design Criteria - A13

- Reference to BS ISO 17772 for Indoor Environmental Quality categories added to 230.000.

#### Residential Projects - B20

- Standards added to 400.201 (heating section) for design work and calculations for design heat load (for use on D&B projects).
- British Standards removed from 1000.222 on flushing and cleaning of pipework so the clause only refers to BSRIA BG 29 for pre-commission cleaning.
- General ventilation clause 600.204 amended (BS EN 61591 added for testing of range hoods with fans).
- Addition of new standard BS EN IEC 63044 for HBES and BACS to clauses 800.805 and 800.806.

#### Domestic Kitchen Fittings - N11

- BS EN 61591 added for testing of range hoods with fans to 310.060.
- BS 6173 added to installation clause 320.010 for when domestic cooking appliances are installed in commercial or industrial premises in conjunction with catering appliances.

#### Catering Equipment - N12

- General update of clause 300.010 for kitchen equipment / installation, referring to BS EN 203 (gas heated catering equipment) and BS EN 16282 / BESA DW/172 (ventilation equipment/systems).
- Various equipment clauses amended to state "relevant parts of BS EN 203" in lieu of BS EN 203-1.
- BS 6172 added to 300.010 to cover the scenario when domestic gas fired appliances are installed in commercial and industrial premises including educational establishments.

## Content Common to CAWS and BG 56 Based Specifications

### Section 2 Details of Work Section Updates & Audits

#### Above & Below Ground Drainage - R11, R12 and R19

- Classes for gullies & access covers added / general update of clauses R11:300.020 and R19:300.010 with regard to latest versions of BS EN 1253.
- New clause R11:300.012 added for stainless steel spigot and socket pipes and fittings.
- New clause R12:300.042 added for stainless steel spigot and socket pipes and fittings.
- R12:310.050 amended, BS ISO 16611 added for non-circular GRP pipes.

#### Cold Water - S10

BS EN 805 for water supply systems outside buildings added to 100.020.

#### Hot and Cold Water / Sanitary Appliances / Fittings - S11, S12 & N13

- TMV's to BS EN 1111 and additional clarification text added to 310.090 and 310.250.
- Text added to TMV clauses in S11 / S12 to clarify static and dynamic working pressures of valves to BS EN 1111 and BS EN 1287.
- BS EN 12831-3 added to 100.020 for calculation of design heat load and storage volume for domestic hot water.

#### Water Reclamation System - S17

New clause 320.015 added for installation of water meters.

#### Compressed Air - S30 & S31

BS ISO 5782 for compressed air filter product literature/product marking added to S30:310.060 and S31:310.050.

#### Natural Gas - S32

BS 6172 added to 300.010 to cover the scenario when domestic gas fired appliances are installed in commercial and industrial premises including educational establishments.

#### Boilers - T10, T32 & B20

- BS EN 15035 added to various clauses for small oil fired room sealed boilers.
- Withdrawn standards BS EN 15417 and BS EN 677 removed from various boiler clauses.

#### Heat Pumps - T14

BS EN 12831-1 added to 100.020 for design heat load calculations.

#### Low Temperature Hot Water Heating - T32 (Self-Contained Specification)

Clause 200.001 on standards amended and BS EN 12831-1 added for design heat load calculations.

#### Local Heating Units - T42

New clause 300.032 added for LPG radiant parasol heaters referencing standard BS EN 14543.

#### Central Refrigeration - T60

Various clauses updated to add explanatory text for each part of BS EN 14511.

#### General Ventilation - U10

References to various parts of BS EN 16798 added to 300.005 and 300.010 (calculations for infiltration air flow rates and energy losses due to ventilation).

#### Terminal heat pump and hybrid Air Conditioning - U43 and U50

Potentially incorrect / out of date specific design criteria removed from 100.020 and clauses generally updated

## Content Common to CAWS and BG 56 Based Specifications

### Section 2 Details of Work Section Updates & Audits

#### Air Conditioning Units - U60, U39 and T70

- General update of the clauses listed below including: refrigerants R410A and R32; clarification text added associated with BS EN 378 and BS EN 14511; addition of international standards BS ISO 5151, BS ISO 15042 and BS ISO 13253 (non-ducted AC units, multi-split systems and ducted air-cooled AC units / air-to-air heat pumps):
  - U60 clauses - 300.020, 300.030, 300.035, 300.040, 300.050, 300.060, 300.065 & 300.070
  - U39 clauses - 200.050, 300.020, 300.030, 300.040, 300.050 & 300.070

#### HV Supply / Distribution / Public Utility Supply - V11

Replaced relevant parts of BS EN 50272 for secondary battery systems with the relevant parts of BS EN 62485 in Clause 310.230.

#### Solar Photovoltaic (PV) Systems - V13

Replaced relevant parts of BS EN 50272 for secondary battery systems with the relevant parts of BS EN 62485 in Clause 310.060. Clauses 300.001 - 300.005 have been revised to standardise the approach to specifying legislation.

#### Wind Power Systems - V14

Replaced relevant parts of BS EN 50272 for secondary battery systems with the relevant parts of BS EN 62485 in Clause 310.060.

#### Low and Extra-Low Voltage DC Supply - V31

Replaced relevant parts of BS EN 50272 for secondary battery systems with the relevant parts of BS EN 62485 in Clause 300.040.

#### Uninterruptible Power Supply (UPS) - V32

Replaced relevant parts of BS EN 50272 for secondary battery systems with the relevant parts of BS EN 62485 in clauses 310.010, 310.015 & 310.090.

#### Electrical Energy Storage Systems (EESS) - V35

Replaced relevant parts of BS EN 50272 for secondary battery systems with the relevant parts of BS EN 62485 in clauses 300.010 & 310.030.

#### Emergency Lighting - V40

Replaced relevant parts of BS EN 50272 for secondary battery systems with the relevant parts of BS EN 62485 in Clause 310.040.

#### Electrical Installation - V90 (Self-Contained Specification)

Addition of new standard BS EN IEC 63044 for HBES and BACS to Clause 200.270.

#### Telecommunications Networks - V91 (Self-Contained Specification)

Replaced relevant parts of BS EN 50272 for secondary battery systems with the relevant parts of BS EN 62485 in Clause 200.230.

#### Security Systems, AV Systems and Non-Security Alarm Systems - V92 (Self-Contained Specification)

Replaced relevant parts of BS EN 50272 for secondary battery systems with the relevant parts of BS EN 62485 in Clause 200.230.

#### Telecommunications - W10

Replaced relevant parts of BS EN 50272 for secondary battery systems with the relevant parts of BS EN 62485 in Clause 300.010.

## Content Common to CAWS and BG 56 Based Specifications

### Section 2 Details of Work Section Updates & Audits

#### Bedhead Services - W14

Replaced relevant parts of BS EN 50272 for secondary battery systems with the relevant parts of BS EN 62485 in Clause 310.020.

#### Facilities for the Disabled - W15

Replaced relevant parts of BS EN 50272 for secondary battery systems with the relevant parts of BS EN 62485 in Clause 310.020.

#### Access Control - W40

Replace relevant parts of BS EN 50272 for secondary battery systems with the relevant parts of BS EN 62485 in Clause 310.070

#### Security Detection and Alarm - W41

- Updated Clause 310.300 to reflect the publication of PD 6669, and reference added to BS EN 50136-series, for alarm transmission systems. Clause guidance added for categorisation of system to PD 6669.
- Replaced relevant parts of BS EN 50272 for secondary battery systems with the relevant parts of BS EN 62485 in Clause 310.020.

#### Central Control BMS - W60

- The title of Clause 320.100 has been changed to, "CONTROL PANELS – DESIGN, CONSTRUCTION AND INSTALLATION". It has been updated to include all control panel requirements in a single clause.
- Clause 330.350 has been deleted, and the requirements included in Clause 320.100.
- Addition of new standard BS EN IEC 63044 for HBES and BACS to Clause 300.010.

#### Central Control BMS - W60 and W69

- BS EN 16946-1 added to W60:340.150 for inspection of operational functions of BMS.
- Text added to W60:300.010 and W69:200.010 to clarify British Standards.

#### Central Control BMS - W69 (Self-Contained Specification)

- Clause 600.070 has a minor amendment to remove unnecessary sub-clauses.
- Clause 600.080 has been re-titled, "OPTIMUM START/STOP AND WEATHER COMPENSATION FOR HVAC SYSTEMS". It combines requirements from the former Clauses 600.080 for heating systems, and 600.090 for cooling systems, as a lot of the requirements were applicable to both heating and cooling, and both had ventilation requirements. The requirements for weather compensation, formerly in 600.100, have been included in this clause.
- Clause 600.090 and 600.100 have been deleted and the requirements included in Clause 600.080.
- Clause 700.030 has had some requirements for older communications technologies set to pre-delete.
- Clause 1200.020 for control panels has been rewritten to align with Clause W60:320.100. Its title has changed to, "CONTROL PANELS AND STARTERS – DESIGN, CONSTRUCTION AND INSTALLATION".
- Clause 1200.100 for control and indicator circuit fuses has had a minor change to reduce the individual clauses required to specify electrical parameters.
- Clauses, "1200.160 STARTER AND CONTROL PANEL WIRING" and "1200.170 COMPONENT MOUNTING" have been deleted as their requirements have been accommodated in the rewritten Clause 1200.020.
- Addition of new standard BS EN IEC 63044 for HBES and BACS to Clause 200.010.

#### Escalators and Moving Pavements - X11 & X12

BS EN 115-1 and associated Published Documents added to relevant clauses in both sections.

## Content Common to CAWS and BG 56 Based Specifications

### Section 2 Details of Work Section Updates & Audits

#### Pipework (Stainless steel) - Y10 & Part 2

- New Part 2 clause 210.015 added for stainless steel pipes and fittings, with existing clause 210.020 changed to cover carbon steel pipes only (SS content moved to 210.015).
- Associated with the above the following Y reference clause amends:
  - 2200# - title change
  - 2225#, 2225A & 2225B - removed as they cover waste water only (and new clauses added in R11 / R12 refers to BS EN 1124)
  - 2230#, 2231#, 2240# changed to standard non-editable reference clauses (options now in Part 2 clause 210.015)
  - 2250# deleted

#### Valves / Pipeline Ancillaries - Y11 & Part 2

- BS EN 1074 for valves for water supply applications carrying water for human consumption added to Part 2 Clause 211.030.
- BS EN ISO 6134 for hoses for steam and condensate added to Part 2 Clause 211.260.

#### Water Tanks - Y21 & Part 2

- Part 2 clause 221.030 for sectional steel tanks - withdrawn standard BS 1564 removed, additional text added and clause made pre-delete as most tanks are GRP sectional.
- Y10:2010A and 2010B deleted (associated with withdrawn BS 1564).

#### Ductwork - Y30

BS EN 12101-8 added to 3079 for smoke control dampers used in pressure differential systems and smoke / heat control systems.

#### Fans - Y41

- Descriptive text associated with British Standards added to clause 1010.
- BS EN ISO 13350 added to 1010 for testing of jet fans.

#### Air Filtration - Y42

Guidance updated regarding introduction of BS EN ISO 16890 to replace BS EN 779. Guidance table expanded to include examples of filters meeting each class in the two standards.

#### Humidifiers and Dehumidifiers - Y44

BS EN 378 and BS EN 810 added to Part 2 clause 244.039 for refrigeration based dehumidifiers.

#### Grilles and Diffusers - Y46 & Part 2

- Part 2 clause 246.020 updated / content enhanced on transfer grilles.
- New Y46 clauses 2070C & 2070D added for fire resistant transfer grilles with intumescent element and intumescent element + smoke control facility, respectively.

#### Cables and Wiring - Y61

Removed withdrawn standard BS 7540-3 from clauses 2110# and 4040.

## Content Common to CAWS and BG 56 Based Specifications

### Section 3 Schedules

Below is a summary of the updates to schedules in Excel that can be activated by clicking on the links from NES clauses.

Some guidance has been incorporated into many of the schedules in the form of "comments" that are displayed when hovering over certain cells.

These supplied NES schedules:

- Are independent of classification
- Have been updated to a common formatting theme
- Are orientated as landscape for ease of publishing

For a complete listing and print preview of all NES schedules refer to document NES Building Services Schedules, located on the "Guidance" tool bar, under "Other Resources".

The list below covers significant amendments / changes to existing schedules and new schedules.

#### Types

U – Existing schedule that has been significantly updated

N – New schedule

Section Reference		Schedule Name	Type	Details
CAWS	BG 56			
U62	C1.4.370	Chilled Ceiling Panels, Rafts and Sails	U	Updated for use with ceiling panels that can provide cooling and heating.
T31, T32	C1.4.10	Radiant Heating	U	Updated for use with radiant panels that can provide heating and cooling.

Content Common to CAWS and BG 56 Based Specifications

Section 4 Detail Changes to Reference Documents

Work Section		Reference Document - Current	Status of Current Reference	Reference Document - New
CAWS	BG 56			
A13, A64, B20, P30, V34, V35, V90, V91, V92, W10, W20, W21, W22, W23, W30, W40, W41, W42, W50, W51, W52, W53, W54, W56, W60, W61, W69, W70, Z Part 2, Y60, Y61, Y72	A1.4, C2.1.160, C2.1.170, C2.3.10, C2.3.80, C2.3.100, C2.3.110, C2.3.20, C2.4.10, C2.4.20, C2.4.30, C2.5.10, C2.1.100, C2.1.130, C2.1.140, C2.5.20, C2.1.110, C1.7.10, C1.7.20, C2.3.30, C2.1.120, D2.6.10, D2.6.20, D2.6.60	BS EN 50174-1:2009+A2:2014 Information technology. Cabling installation. Installation specification and quality assurance	Withdrawn, Superseded	BS EN 50174-1:2018 Information technology. Cabling installation. Installation specification and quality assurance
A13, A64, B20, P30, V34, V35, V90, V91, V92, W10, W20, W21, W22, W23, W30, W40, W41, W42, W50, W51, W52, W53, W54, W56, W60, W61, W69, W70, Z Part 2, Y60, Y61, Y72	A1.4, C2.1.160, C2.1.170, C2.3.10, C2.3.80, C2.3.100, C2.3.110, C2.3.20, C2.4.10, C2.4.20, C2.4.30, C2.5.10, C2.1.100, C2.1.130, C2.1.140, C2.5.20, C2.1.110, C1.7.10, C1.7.20, C2.3.30, C2.1.120, D2.6.10, D2.6.20, D2.6.60	BS EN 50174-2:2009+A2:2014 Information technology. Cabling installation. Installation planning and practices inside buildings	Withdrawn, Superseded	BS EN 50174-2:2018 Information technology. Cabling installation. Installation planning and practices inside buildings



Content Common to CAWS and BG 56 Based Specifications

Section 4 Detail Changes to Reference Documents

Work Section		Reference Document - Current	Status of Current Reference	Reference Document - New
CAWS	BG 56			
A13	A1.4		New Addition	BS ISO 17772-1:2017 Energy performance of buildings. Indoor environmental quality. Indoor environmental input parameters for the design and assessment of energy performance of buildings
A33, A64, N13, V34, V90, V91, V92, W14, W15, W21, W22, W40, W42, X20, Y74	A3.4, C5.40, C2.1.160, C2.3.60, C2.3.70, C2.3.90, C2.3.100, C2.4.10, C2.4.30, C3.2.10, D2.6.70	BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people. Code of practice	Withdrawn, Superseded	BS 8300-1:2018 Design of an accessible and inclusive built environment. External environment. Code of practice BS 8300-2:2018 Design of an accessible and inclusive built environment. Buildings. Code of practice
B20, T10, T32	C1.4.30	BS EN 304:1992 Heating boilers. Test code for heating boilers for atomizing oil burners	Withdrawn, Superseded	BS EN 304:2017 Heating boilers. Test code for heating boilers for atomizing oil burners
B20, T10, T32	C1.4.30	BS EN 15034:2006 Heating boilers. Condensing heating boilers for fuel oil	Withdrawn, Superseded	BS EN 303-2:2017 Heating boilers. Heating boilers with forced draught burners. Special requirements for boilers with atomizing oil burners
B20, N13, S11, S12	C5.40, C1.2.20	BS EN 1111:1999 Sanitary tapware. Thermostatic mixing valves (PN 10). General technical specification	Withdrawn, Superseded	BS EN 1111:2017 Sanitary tapware. Thermostatic mixing valves (PN 10). General technical specification
B20, N11, N13, S11, S12	C5.20, C5.40, C1.2.20	BS EN 1287:1999 Sanitary tapware. Low pressure thermostatic mixing valves. General technical specifications	Withdrawn, Superseded	BS EN 1287:2017 Sanitary tapware. Low pressure thermostatic mixing valves. General technical specification
B20, S12, T14, T32, U43, U50	C1.4.70, C1.4.340	BS EN 12831:2003 Heating systems in buildings. Method for calculation of the design heat load	Withdrawn, Superseded	BS EN 12831-1:2017 Energy performance of buildings. Method for calculation of the design heat load. Space heating load, Module M3-3

Content Common to CAWS and BG 56 Based Specifications

Section 4 Detail Changes to Reference Documents

Work Section		Reference Document - Current	Status of Current Reference	Reference Document - New
CAWS	BG 56			
B20, S11, S12	C1.2.20		New Addition	BS EN 12831-3:2017 Energy performance of buildings. Method for calculation of the design heat load. Domestic hot water systems heat load and characterisation of needs, Module M8-2, M8-3
B20, T14, T60, T62, T69, T70, U39, U43, U50, U60, U70	C1.4.70, C1.4.380, C1.4.400, C1.4.390, C1.4.340, C1.4.350, C1.4.430	BS EN 14511-1:2013 Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling. Terms, definitions and classification	Withdrawn, Superseded	BS EN 14511-1:2018 Air conditioners, liquid chilling packages and heat pumps for space heating and cooling and process chillers, with electrically driven compressors. Terms and definitions
B20, T14, T60, T62, T69, T70, U39, U43, U50, U60, U70	C1.4.70, C1.4.380, C1.4.400, C1.4.390, C1.4.340, C1.4.350, C1.4.430	BS EN 14511-2:2013 Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling. Test conditions	Withdrawn, Superseded	BS EN 14511-2:2018 Air conditioners, liquid chilling packages and heat pumps for space heating and cooling and process chillers, with electrically driven compressors. Test conditions
B20, T14, T60, T62, T69, T70, U39, U43, U50, U60, U70	C1.4.70, C1.4.380, C1.4.400, C1.4.390, C1.4.340, C1.4.350, C1.4.430	BS EN 14511-3:2013 Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling. Test methods	Withdrawn, Superseded	BS EN 14511-3:2018 Air conditioners, liquid chilling packages and heat pumps for space heating and cooling and process chillers, with electrically driven compressors. Test methods
B20, T14, T60, T62, T69, T70, U39, U43, U50, U60, U70	C1.4.70, C1.4.380, C1.4.400, C1.4.390, C1.4.340, C1.4.350, C1.4.430	BS EN 14511-4:2013 Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling. Operating requirements, marking and instructions	Withdrawn, Superseded	BS EN 14511-4:2018 Air conditioners, liquid chilling packages and heat pumps for space heating and cooling and process chillers, with electrically driven compressors. Requirements
B20, T10, T32	D1.4.30		New Addition	BS EN 15035:2006 Heating boilers. Special requirements for oil fired

Content Common to CAWS and BG 56 Based Specifications

Section 4 Detail Changes to Reference Documents

Work Section		Reference Document - Current	Status of Current Reference	Reference Document - New
CAWS	BG 56			
				room sealed units up to 70 kW
B20, N11	C5.20		New Addition	BS EN 61591:1997+A12:2015 Household range hoods and other cooking fume extractors. Methods for measuring performance
B20, V92, W11, W40, W41	C2.3.40, C2.4.10, C2.4.20,	BS EN 50131-6:2008+A1:2014 Alarm systems. Intrusion and hold-up systems. Power supplies	Withdrawn, Superseded	BS EN 50131-6:2017 Alarm systems. Intrusion and hold-up systems. Power supplies
B20, V90, W60, W69	C1.7.10		New Addition	BS EN 50491-12-1:2018 General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS). Smart grid. Application specification. Interface and framework for customer. Interface between the CEM and Home/Building Resource manager. General Requirements and Architecture
B20, T40, T41, T42, T70, U19, U39, Y42, Z Part 2	C1.4.140, C1.4.150, C1.4.390, D1.4.470, C1.4.510, C1.4.470, C1.4.450	BS EN 779:2012 Particulate air filters for general ventilation. Determination of the filtration performance	Withdrawn, Superseded	BS EN ISO 16890-1:2016 Air filters for general ventilation. Technical specifications, requirements and classification system based upon particulate matter efficiency (ePM)
U19, U39, Y42, Z Part 2	D1.4.470, C1.4.470			BS EN ISO 16890-2:2016 Air filters for general ventilation. Measurement of fractional efficiency and air flow resistance
				BS EN ISO 16890-3:2016 Air filters for general ventilation. Determination of the gravimetric efficiency and the air flow resistance

Content Common to CAWS and BG 56 Based Specifications

Section 4 Detail Changes to Reference Documents

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CAWS	BG 56			
				versus the mass of test dust captured BS EN ISO 16890-4:2016 Air filters for general ventilation. Conditioning method to determine the minimum fractional test efficiency
B20, V90, W60, W69	C1.7.10		New Addition	BS EN IEC 63044-3:2018 Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS). Electrical safety requirements
N11, N12, S32	C5.20, C5.30, C1.3.10		New Addition	BS 6172:2010+A1:2017 Specification for installation, servicing and maintenance of domestic gas cooking appliances (2nd and 3rd family gases). Specification
N11	C5.20	BS 6465-2:1996 Sanitary installations. Code of practice for space requirements for sanitary appliances	Withdrawn, Superseded	BS 6465-2:2017 Sanitary installations. Space recommendations. Code of practice
N12	C5.30		New Addition	BS EN 16282-1:2017 Equipment for commercial kitchens. Components for ventilation in commercial kitchens. General requirements including calculation method
N12	C5.30		New Addition	BS EN 16282-2:2016 Equipment for commercial kitchens. Components for ventilation in commercial kitchens. Kitchen ventilation hoods; design and safety requirements
N12	C5.30		New Addition	BS EN 16282-3:2016 Equipment for commercial kitchens. Components for

Content Common to CAWS and BG 56 Based Specifications

Section 4 Detail Changes to Reference Documents

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CAWS	BG 56			
				ventilation in commercial kitchens. Kitchen ventilation ceilings; design and safety requirements
N12	C5.30		New Addition	BS EN 16282-4:2016 Equipment for commercial kitchens. Components for ventilation in commercial kitchens. Air inlets and outlets; design and safety requirements
N12	C5.30		New Addition	BS EN 16282-5:2017 Equipment for commercial kitchens. Components for ventilation in commercial kitchens. Air duct. Design and dimensioning
N12	C5.30		New Addition	BS EN 16282-7:2017 Equipment for commercial kitchens. Components for ventilation in commercial kitchens. Installation and use of fixed fire suppression systems
N12	C5.30		New Addition	BS EN 16282-8:2017 Equipment for commercial kitchens. Components for ventilation in commercial kitchens. Installations for treatment of aerosol. Requirements and testing
R11, R12	C1.1.20, C1.1.30		New Addition	BS EN 1124-4:2013 Pipes and fittings of longitudinally welded stainless steel pipes with spigot and socket for wastewater systems. Components for vacuum drainage systems and for drainage systems on ships
R11, R19	C1.1.20		New Addition	BS EN 1253-4:2016 Gullies for buildings. Access covers

Content Common to CAWS and BG 56 Based Specifications

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Work Section		Reference Document - Current	Status of Current Reference	Reference Document - New
CAWS	BG 56			
R11, R12, R19	C1.1.20, C1.1.30	BS EN 1253-5:2003 Gullies for buildings. Gullies with light liquids closure	Withdrawn, Superseded	BS EN 1253-5:2017 Gullies for buildings. Gullies with light liquids closure
R12	C1.1.30		New Addition	BS ISO 16611:2017 Plastics piping systems for drainage and sewerage without pressure. Non-circular pipes and joints made of glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resins (UP). Dimensions, requirements and tests
T42	C1.4.150		New Addition	BS EN 14543:2017 Specification for dedicated liquefied petroleum gas appliances. Parasol patio heaters. Flueless radiant heaters for outdoor or amply ventilated area use
T70, U39, U60	C1.4.390, C1.4.350		New Addition	BS ISO 5151:2017 Non-ducted air conditioners and heat pumps. Testing and rating for performance
T70, U39, U60	C1.4.390, C1.4.350		New Addition	BS ISO 15042:2017 Multiple split-system air conditioners and air-to-air heat pumps. Testing and rating for performance
T70, U39, U60	C1.4.390, C1.4.350		New Addition	BS ISO 13253:2017 Ducted air-conditioners and air-to-air heat pumps. Testing and rating for performance
U10	C1.4.150	BS EN 15241:2007 Ventilation for buildings. Calculation methods for energy losses due to ventilation and infiltration in buildings	Withdrawn, Superseded	BS EN 16798-5-1:2017 Energy performance of buildings. Ventilation for buildings. Calculation methods for energy requirements of ventilation and air conditioning systems

Content Common to CAWS and BG 56 Based Specifications

Section 4 Detail Changes to Reference Documents

Work Section		Reference Document - Current	Status of Current Reference	Reference Document - New
CAWS	BG 56			
				(Modules M5-6, M5-8, M6-5, M6-8, M7-5, M7-8). Method 1: Distribution and generation BS EN 16798-5-2:2017 Energy performance of buildings. Ventilation for buildings. Calculation methods for energy requirements of ventilation systems (Modules M5-6, M5-8, M6-5, M6-8, M7-5, M7-8). Method 2: Distribution and generation
U10	C1.4.180	BS EN 15242:2007 Ventilation for buildings. Calculation methods for the determination of air flow rates in buildings including infiltration	Withdrawn, Superseded	BS EN 16798-7:2017 Energy performance of buildings. Ventilation for buildings. Calculation methods for the determination of air flow rates in buildings including infiltration (Modules M5-5)
V11, V13, V14, V31, V32, V35, V91, V92, W10, W14, W15, W40, W41	C2.1.20, C2.1.40, C2.1.50, C2.1.80, C2.1.90, C2.1.170, C2.3.10, C2.3.60, C2.3.70, C2.4.10, C2.4.20	BS EN 50272-1:2010 Safety requirements for secondary batteries and battery installations. General safety information	Withdrawn, Superseded	BS EN IEC 62485-1:2018 Safety requirements for secondary batteries and battery installations. General safety information
V11, V13, V14, V31, V32, V35, V40, V91, V92, W10, W14, W15, W40, W41	C2.1.20, C2.1.40, C2.1.50, C2.1.80, C2.1.90, C2.1.170, C2.3.10, C2.2.20, C2.3.60, C2.3.70,	BS EN 50272-2:2001 Safety requirements for secondary batteries and battery installations. Stationary batteries	Withdrawn, Superseded	BS EN IEC 62485-2:2018 Safety requirements for secondary batteries and battery installations. Stationary batteries

Content Common to CAWS and BG 56 Based Specifications

Section 4 Detail Changes to Reference Documents

Work Section		Reference Document - Current	Status of Current Reference	Reference Document - New
CAWS	BG 56			
	C2.4.10, C2.4.20			
W14, W40, W41	C2.3.60, C2.4.10, C2.4.20	BS EN 50272-4:2007 Safety requirements for secondary batteries and battery installations. Batteries for use in portable appliances	Withdrawn, Superseded	BS EN IEC 62485-4:2018 Safety requirements for secondary batteries and battery installations. Valve-regulated lead-acid batteries for use in portable appliances
W60	C1.7.10		New Addition	BS EN 16946-1:2017 Energy Performance of Buildings. Inspection of Automation, Controls and Technical Building Management. Module M10-11
W60, W69	C1.7.10	BS EN 50271:2010 Electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen. Requirements and tests for apparatus using software and/or digital technologies	Withdrawn, Superseded	BS EN 50271:2018 Electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen. Requirements and tests for apparatus using software and/or digital technologies
W60, W69, Y71, Y72	C1.7.10, D2.6.50, D2.6.60	BS EN 60715:2001, IEC 60715:1981+A1:1995 Dimensions of low-voltage switchgear and controlgear. Standardized mounting on rails for mechanical support of electrical devices in switchgear and controlgear installations	Withdrawn, Superseded	BS EN 60715:2017 Dimensions of low-voltage switchgear and controlgear. Standardized mounting on rails for mechanical support of switchgear, controlgear and accessories
X11, X12	C3.1.20, C3.1.30	BS EN 115-1:2008+A1:2010 Safety of escalators and moving walks. Construction and installation	Withdrawn, Superseded	BS EN 115-1:2017 Safety of escalators and moving walks. Construction and installation
Y10	D1.8.10	BS ISO 48:2010 Rubber, vulcanized or thermoplastic. Determination of hardness (hardness	Withdrawn, Superseded	BS ISO 48-2:2018 Rubber, vulcanized or thermoplastic. Determination of hardness. Hardness



Content Common to CAWS and BG 56 Based Specifications

Section 4 Detail Changes to Reference Documents

Work Section		Reference Document - Current	Status of Current Reference	Reference Document - New
CAWS	BG 56			
		between 10 IRHD and 100 IRHD)		between 10 IRHD and 100 IRHD
Y46	D1.4.520		New Addition	BS EN 1364-5:2017 Fire resistance tests for non-loadbearing elements. Air transfer grilles
Z Part 2, V90, V91, W10, W11, W12, W14, W15, W20, W21, W22, W23, W30, W40, W41, W42, W50, W53, W60, W61, W69, W70, Y61, Y72	C2.6.20, C2.3.10, C2.3.40, C2.3.50, C2.3.60, C2.3.70, C2.3.80, C2.3.90, C2.3.100, C2.3.110, C2.3.20, C2.4.10, C2.4.20, C2.4.30, C2.5.10, C2.1.140, C1.7.10, C1.7.20, C2.3.30, D2.6.20, D2.6.60	BS EN 50173-1:2011 Information technology. Generic cabling systems. General requirements	Withdrawn, Superseded	BS EN 50173-1:2018 Information technology. Generic cabling systems. General requirements
Z Part 2, V90, V91, W10, W11, W12, W14, W15, W20, W21, W22, W23, W30, W40, W41, W42, W50, W53, W60, W61, W69, W70, Y61, Y72	C2.6.20, C2.3.10, C2.3.40, C2.3.50, C2.3.60, C2.3.70, C2.3.80, C2.3.90, C2.3.100, C2.3.110, C2.3.20, C2.4.10, C2.4.20, C2.4.30, C2.5.10, C2.1.140, C1.7.10, C1.7.20, C2.3.30,	BS EN 50173-2:2007+A1:2010 Information technology. Generic cabling systems. Office premises	Withdrawn, Superseded	BS EN 50173-2:2018 Information technology. Generic cabling systems. Office spaces

Content Common to CAWS and BG 56 Based Specifications

Section 4 Detail Changes to Reference Documents

Work Section		Reference Document - Current	Status of Current Reference	Reference Document - New
CAWS	BG 56			
	D2.6.20, D2.6.60			
Z Part 2, V90, V91, W10, W11, W12, W14, W15, W20, W21, W22, W23, W30, W40, W41, W42, W50, W53, W60, W61, W69, W70, Y61, Y72	C2.6.20, C2.3.10, C2.3.40, C2.3.50, C2.3.60, C2.3.70, C2.3.80, C2.3.90, C2.3.100, C2.3.110, C2.3.20, C2.4.10, C2.4.20, C2.4.30, C2.5.10, C2.1.140, C1.7.10, C1.7.20, C2.3.30, D2.6.20, D2.6.60	BS EN 50173-3:2007+A1:2010 Information technology. Generic cabling systems. Part 3: Industrial	Withdrawn, Superseded	BS EN 50173-3:2018 Information technology. Generic cabling systems. Industrial spaces
Z Part 2, V90, V91, W10, W11, W12, W14, W15, W20, W21, W22, W23, W30, W40, W41, W42, W50, W53, W60, W61, W69, W70, Y61, Y72	C2.6.20, C2.3.10, C2.3.40, C2.3.50, C2.3.60, C2.3.70, C2.3.80, C2.3.90, C2.3.100, C2.3.110, C2.3.20, C2.4.10, C2.4.20, C2.4.30, C2.5.10, C2.1.140, C1.7.10, C1.7.20, C2.3.30, D2.6.20, D2.6.60	BS EN 50173-4:2007+A2:2012 Information technology. Generic cabling systems. Homes	Withdrawn, Superseded	BS EN 50173-4:2018 Information technology. Generic cabling systems. Homes
Z Part 2, V90, V91, W10, W11, W12, W14,	C2.6.20, C2.3.10, C2.3.40, C2.3.50,	BS EN 50173-5:2007+A2:2012	Withdrawn, Superseded	BS EN 50173-5:2018 Information technology. Generic cabling systems. Data centre spaces

Content Common to CAWS and BG 56 Based Specifications

Section 4 Detail Changes to Reference Documents

Work Section		Reference Document - Current	Status of Current Reference	Reference Document - New
CAWS	BG 56			
W15, W20, W21, W22, W23, W30, W40, W41, W42, W50, W53, W60, W61, W69, W70, Y61, Y72	C2.3.60, C2.3.70, C2.3.80, C2.3.90, C2.3.100, C2.3.110, C2.3.20, C2.4.10, C2.4.20, C2.4.30, C2.5.10, C2.1.140, C1.7.10, C1.7.20, C2.3.30, D2.6.20, D2.6.60	Information technology. Generic cabling systems. Data centres		
Z Part 2, V90, V91, W10, W11, W12, W14, W15, W20, W21, W22, W23, W30, W40, W41, W42, W50, W53, W60, W61, W69, W70, Y61, Y72	C2.6.20, C2.3.10, C2.3.40, C2.3.50, C2.3.60, C2.3.70, C2.3.80, C2.3.90, C2.3.100, C2.3.110, C2.3.20, C2.4.10, C2.4.20, C2.4.30, C2.5.10, C2.1.140, C1.7.10, C1.7.20, C2.3.30, D2.6.20, D2.6.60	BS EN 50173-6:2013 Information technology. Generic cabling systems. Distributed building services	Withdrawn, Superseded	BS EN 50173-6:2018 Information technology. Generic cabling systems. Distributed building services
A13, A64, B20, T19, V10	A1.4, C1.4.100, C2.1.10		Amendment 1	

Content Common to CAWS and BG 56 Based Specifications

Section 4 Detail Changes to Reference Documents

## NES Clauses Containing WELL Building Standard Requirements

### BSRIA BG 56 Based Format Clauses

#### PART A - PRELIMINARIES / GENERAL CONDITIONS

##### A1 - THE PROJECT GENERALLY

A1.1 - 110.000 THE PROJECT AND BIM REQUIREMENTS:

A1.1 - 140.000 DESIGN AND PROJECT TEAM:

##### A3 - EMPLOYER'S REQUIREMENTS

A3.3 - 140.000 ASSESSMENT AND MONITORING:

A3.4 - 145.000 ASSESSMENT AND MONITORING:

A3.4 - 170.000 STANDARDS, REGULATIONS AND BREEAM REQUIREMENTS:

A3.8 - 153.005 WELL BUILDING STANDARD V1 REQUIREMENTS:

#### PART B - PROJECT PARTICULAR SCOPE OF WORKS

##### B1 - INTRODUCTION, PROJECT TEAM AND PROGRAMME

100.150 PROJECT TEAM:

##### B6 - DESIGN CRITERIA AND STANDARDS

100.265 OCCUPANT WELLBEING ASSESSMENT SCHEME AND REQUIREMENTS:

##### B7 - TESTING, COMMISSIONING, HANDOVER AND AFTERCARE

100.110 DEMARCATION OF RESPONSIBILITIES OF COMMISSIONING TEAM:

##### B8 - DETAILED SYSTEMS DESCRIPTIONS, CONTROL STRATEGIES AND OPERATING REGIMES

B8.1.20 - 100.025 WELL BUILDING STANDARD V1 REQUIREMENTS:

B8.2.30 - 100.020 DESIGN PARAMETERS:

B8.2.40 - 100.010 PERFORMANCE OBJECTIVES:

B8.2.50 - 100.010 PERFORMANCE OBJECTIVES:

B8.2.80 - 100.010 PERFORMANCE OBJECTIVES:

B8.4.50 - 100.010 PERFORMANCE OBJECTIVES:

B8.4.60 - 100.010 PERFORMANCE OBJECTIVES:

B8.4.100 - 100.010 PERFORMANCE OBJECTIVES:

B8.4.120 - 100.010 PERFORMANCE OBJECTIVES:

B8.4.170 - 100.020 DESIGN PARAMETERS (REFURBISHMENT):

B8.4.170 - 100.021 BREEAM REQUIREMENTS (REFURBISHMENT) / WELL REQUIREMENTS:

B8.4.170 - 100.022 BREEAM REQUIREMENTS (NEW BUILD) / WELL REQUIREMENTS:

B8.4.170 - 100.025 DESIGN PARAMETERS (NEW BUILD):

B8.4.250 - 100.010 PERFORMANCE OBJECTIVES:

B8.4.260 - 100.010 PERFORMANCE OBJECTIVES:

B8.4.270 - 100.010 PERFORMANCE OBJECTIVES:

B8.4.280 - 100.010 PERFORMANCE OBJECTIVES:

B8.4.290 - 100.010 PERFORMANCE OBJECTIVES:

B8.4.300 - 100.010 PERFORMANCE OBJECTIVES:

B8.4.310 - 100.010 PERFORMANCE OBJECTIVES:

B8.4.320 - 100.010 PERFORMANCE OBJECTIVES:

B8.4.330 - 100.010 PERFORMANCE OBJECTIVES:

B8.4.350 - 100.010 PERFORMANCE OBJECTIVES:

B8.4.355 - 100.010 PERFORMANCE OBJECTIVES:

B8.4.372 - 100.025 DESIGN PARAMETERS (NEW BUILD):

B8.4.376 - 100.020 DESIGN PARAMETERS:

B8.9.10 - 100.020 DESIGN PARAMETERS:

B8.9.10 - 100.021 DESIGN PARAMETERS:

B8.9.10 - 100.040 CONTROL REQUIREMENTS (REFURBISHMENT):

## Content Common to CAWS and BG 56 Based Specifications

### Section 4 Detail Changes to Reference Documents

- B8.9.10 - 100.041 CONTROL REQUIREMENTS:
- B8.9.10 - 100.042 CONTROL REQUIREMENTS (NEW BUILD):
- B8.15.30 - 100.025 WELL BUILDING STANDARD V1 REQUIREMENTS:
- B8.15.40 - 100.025 WELL BUILDING STANDARD V1 REQUIREMENTS:

#### PART C - PROJECT SPECIFIC (PARTICULAR) MATERIALS / SCHEDULES AND REQUIREMENTS

##### C1 - MECHANICAL

- C1.2.10 - 300.009 WELL BUILDING STANDARD V1 REQUIREMENTS:
- C1.2.10 - 300.015 LEAK DETECTION SYSTEM (REFURBISHMENT):
- C1.2.10 - 300.016 LEAK DETECTION SYSTEM (NEW BUILD):
- C1.3.10 - 310.010 LOCAL METERS (REFURBISHMENT):
- C1.4.30 - 300.020 BOILER SELECTION CRITERIA (REFURBISHMENT):
- C1.4.30 - 300.022 BOILER SELECTION CRITERIA (NEW BUILD):
- C1.4.40 - 300.025 BOILER SELECTION CRITERIA (REFURBISHMENT):
- C1.4.40 - 300.026 BOILER SELECTION CRITERIA (NEW BUILD):
- C1.4.70 - 300.006 REFRIGERANTS:
- C1.4.180 - 300.010 BUILDING DETAILS AND DESIGN REQUIREMENTS:
- C1.4.230 - 300.010 GENERAL PURPOSE LABORATORY FUME CUPBOARDS (REFURBISHMENT):
- C1.4.230 - 300.012 GENERAL PURPOSE LABORATORY FUME CUPBOARDS (NEW BUILD):
- C1.4.230 - 300.015 FUME CUPBOARDS (REFURBISHMENT):
- C1.4.230 - 300.016 FUME CUPBOARDS (NEW BUILD):
- C1.4.380 - 300.076 REFRIGERANTS:
- C1.4.390 - 300.015 REFRIGERANTS (REFURBISHMENT):
- C1.4.390 - 300.016 REFRIGERANTS (NEW BUILD):
- C1.4.400 - 300.015 SAFETY AND ENVIRONMENTAL REQUIREMENTS:
- C1.4.450 - 240.010 GENERAL:
- C1.4.480 - 243.010 GENERAL:
- C1.4.490 - 244.010 GENERAL:
- C1.7.10 - 300.131 BREEAM REQUIREMENTS (NEW CONSTRUCTION):
- C1.7.10 - 300.132 BREEAM REQUIREMENTS (REFURBISHMENT AND FIT OUT) / WELL REQUIREMENT:
- C1.10.20 - 251.017 WELL BUILDING STANDARD V1 REQUIREMENTS:

##### C2 - ELECTRICAL

- C2.2.10 - 310.060 REGULATING HF BALLASTS (REFURBISHMENT):
- C2.2.10 - 310.061 REGULATING HF BALLASTS (NEW BUILD):
- C2.2.50 - 271.010 GENERAL:
- C2.5.20 - 300.010 LEAK DETECTION SYSTEM:

##### D1 - MECHANICAL

- D1.4.500 - 1010 PERFORMANCE:
- D1.4.520 - 1010 PERFORMANCE:
- D1.9.10 - 1030 MATERIALS:
- D1.10.20 - 3025 SEASONAL COMMISSIONING:

#### CAWS Based Format Clauses

##### A - Preliminaries / General Conditions

###### A10 - PROJECT PARTICULARS

- 110.000 THE PROJECT AND BIM REQUIREMENTS:
- 140.000 DESIGN AND PROJECT TEAM:

###### A32 - MANAGEMENT OF THE WORKS

Content Common to CAWS and BG 56 Based Specifications

Section 4 Detail Changes to Reference Documents

- 140.000 ASSESSMENT AND MONITORING:
  - A33 - QUALITY STANDARDS/CONTROL
    - 145.000 ASSESSMENT AND MONITORING:
    - 170.000 STANDARDS, REGULATIONS AND BREEAM REQUIREMENTS:
  - A37 - OPERATION/MAINTENANCE OF THE FINISHED BUILDING
    - 153.005 WELL BUILDING STANDARD V1 REQUIREMENTS:
  - A64 - GENERAL CONDITIONS (SELF-CONTAINED SPECIFICATION)
    - 100.059 WELL OR OTHER OCCUPANT WELLBEING ASSESSOR:
    - 430.020 WORKMANSHIP AND MATERIALS:
    - 520.010 GENERAL:
    - 710.120 WELL BUILDING STANDARD V1 REQUIREMENTS:
- N - Equipment and Off-Site Pre-Fabrication
  - N12 - CATERING EQUIPMENT
    - 100.025 WELL BUILDING STANDARD V1 REQUIREMENTS:
  - N13 - SANITARY APPLIANCES
    - 100.025 WELL BUILDING STANDARD V1 REQUIREMENTS:
- R - Disposal Systems
  - R11 - FOUL DRAINAGE ABOVE GROUND
    - 100.025 WELL BUILDING STANDARD V1 REQUIREMENTS:
- S - Furniture / Equipment
  - S10 - COLD WATER
    - 300.009 WELL BUILDING STANDARD V1 REQUIREMENTS:
    - 300.015 LEAK DETECTION SYSTEM (REFURBISHMENT):
    - 300.016 LEAK DETECTION SYSTEM (NEW BUILD):
  - S12 - HOT AND COLD WATER (SELF-CONTAINED SPECIFICATION)
    - 100.030 WELL BUILDING STANDARD V1 REQUIREMENTS:
    - 200.145 LEAK DETECTION SYSTEM (REFURBISHMENT):
    - 200.146 LEAK DETECTION SYSTEM (NEW BUILD):
  - S13 - PRESSURISED WATER
    - 100.020 DESIGN PARAMETERS:
  - S14 - IRRIGATION
    - 100.010 PERFORMANCE OBJECTIVES:
  - S15 - FOUNTAINS/WATER FEATURES
    - 100.010 PERFORMANCE OBJECTIVES:
  - S20 - TREATED WATER
    - 100.010 PERFORMANCE OBJECTIVES:
- T - Mechanical Heating / Cooling / Refrigeration Systems
  - T10 - GAS / OILED FIRED BOILERS
    - 300.020 BOILER SELECTION CRITERIA (REFURBISHMENT):
    - 300.022 BOILER SELECTION CRITERIA (NEW BUILD):
  - T11 - COAL FIRED BOILERS
    - 300.026 BOILER SELECTION CRITERIA (NEW BUILD):
  - T12 - ELECTRODE/DIRECT ELECTRIC BOILERS
    - 100.010 PERFORMANCE OBJECTIVES:
  - T13 - PACKAGED STEAM GENERATORS
    - 100.010 PERFORMANCE OBJECTIVES:
  - T19 - COMBINED HEAT AND POWER SYSTEMS
    - 100.010 PERFORMANCE OBJECTIVES:
  - T31 - LOW TEMPERATURE HOT WATER HEATING
    - 100.010 PERFORMANCE OBJECTIVES:

## Content Common to CAWS and BG 56 Based Specifications

### Section 4 Detail Changes to Reference Documents

#### T33 - STEAM HEATING

100.010 PERFORMANCE OBJECTIVES:

#### T60 - CENTRAL REFRIGERATION PLANT

300.076 REFRIGERANTS:

#### T70 - LOCAL COOLING UNITS

100.025 DESIGN PARAMETERS (NEW BUILD):

#### T71 - COLD ROOM SYSTEMS

100.020 DESIGN PARAMETERS:

### U - Ventilation / Air Conditioning Systems

#### U10 - GENERAL VENTILATION

100.020 DESIGN PARAMETERS (REFURBISHMENT) / WELL REQUIREMENTS:

100.021 BREEAM REQUIREMENTS (REFURBISHMENT):

100.022 BREEAM REQUIREMENTS (NEW BUILD):

100.025 DESIGN PARAMETERS (NEW BUILD):

300.010 BUILDING DETAILS AND DESIGN REQUIREMENTS:

#### U15 - FUME CUPBOARD AND SAFETY CABINET SYSTEMS

300.010 GENERAL PURPOSE LABORATORY FUME CUPBOARDS (REFURBISHMENT):

300.012 GENERAL PURPOSE LABORATORY FUME CUPBOARDS (NEW BUILD):

300.015 FUME CUPBOARDS (REFURBISHMENT):

300.016 FUME CUPBOARDS (NEW BUILD):

#### U19 - FUME CUPBOARD AND SAFETY CABINET SYSTEMS

100.020 DESIGN PARAMETERS (REFURBISHMENT):

100.025 DESIGN PARAMETERS (NEW BUILD):

#### U30 - LOW VELOCITY AIR CONDITIONING

100.010 PERFORMANCE OBJECTIVES:

#### U31 - VAV AIR CONDITIONING

100.010 PERFORMANCE OBJECTIVES:

#### U32 - DUAL DUCT AIR CONDITIONING

100.010 PERFORMANCE OBJECTIVES:

#### U33 - MULTI ZONE AIR CONDITIONING

100.010 PERFORMANCE OBJECTIVES:

#### U39 - AIR CONDITIONING (SELF-CONTAINED SPECIFICATION)

100.010 PERFORMANCE OBJECTIVES:

#### U40 - INDUCTION AIR CONDITIONING

100.010 PERFORMANCE OBJECTIVES:

#### U41 - FAN COIL AIR CONDITIONING

100.010 PERFORMANCE OBJECTIVES:

#### U42 - TERMINAL RE-HEAT AIR CONDITIONING

100.010 PERFORMANCE OBJECTIVES:

#### U43 - TERMINAL HEAT PUMP AIR CONDITIONING

100.010 PERFORMANCE OBJECTIVES:

#### U50 - HYBRID SYSTEM AIR CONDITIONING

100.010 PERFORMANCE OBJECTIVES:

#### U60 - AIR CONDITIONING

100.010 PERFORMANCE OBJECTIVES:

#### U61 - CHILLED BEAMS

100.010 PERFORMANCE OBJECTIVES:

#### U62 - CHILLED CEILINGS AND RAFTS / SAILS

100.010 PERFORMANCE OBJECTIVES:

### V - Electrical Supply / Power / Lighting Systems

#### V21 - GENERAL LIGHTING

100.020 DESIGN PARAMETERS:

Content Common to CAWS and BG 56 Based Specifications

Section 4 Detail Changes to Reference Documents

- 100.021 DESIGN PARAMETERS:
- 100.040 CONTROL REQUIREMENTS (REFURBISHMENT):
- 100.041 CONTROL REQUIREMENTS:
- 100.042 CONTROL REQUIREMENTS (NEW BUILD):
- 310.060 REGULATING HF BALLASTS (REFURBISHMENT):
- 310.061 REGULATING HF BALLASTS (NEW BUILD):

W - Communications / Security / Control Systems

W54 - LIQUID DETECTION ALARM

- 300.010 LEAK DETECTION SYSTEM:

W60 - CENTRAL CONTROL/BUILDING MANAGEMENT

- 300.132 BREEAM REQUIREMENTS (REFURBISHMENT AND FIT OUT) / WELL REQUIREMENTS:

Y - Reference Specification

Y45 - SILENCERS / ACOUSTIC TREATMENT

- 1010 PERFORMANCE:

Y46 - GRILLES / DIFFUSERS / LOUVRES

- 1010 PERFORMANCE:

Y50 - THERMAL INSULATION

- 1030 MATERIALS:

Y51 - TESTING AND COMMISSIONING OF MECHANICAL SERVICES

- 3025 SEASONAL COMMISSIONING:

Z Part 2 Clauses

AIR HANDLING UNITS

- 240.010 GENERAL:

COILS, HEAT RECOVERY EQUIPMENT AND GAS / ELECTRIC BATTERIES

- 243.010 GENERAL:

COILS, HEAT RECOVERY EQUIPMENT AND GAS / ELECTRIC BATTERIES

- 244.010 GENERAL:

TESTING AND COMMISSIONING OF MECHANICAL SERVICES

- 251.017 WELL BUILDING STANDARD V1 REQUIREMENTS:

LUMINAIRES AND LAMPS

- 273.010 GENERAL: