DAIKIN

Daikin, your partner to boost your

BREEAM project

Team up with us to achieve your BREEAM objectives, while staying within budget

Creating a sustainable future together

Air is something that surrounds us 24 hours a day. At Daikin, the future of the world's air is our greatest concern. We use our expertise about air, our feeling for innovation and our mastery of technology to improve the air we breathe. Aiming for sustainable growth, and a sustainable society through technological strength and outstanding human resources, guided by the United Nations Sustainable Development Goals (SDGs).

The Sustainable Development Goals, defined in 2015, are a set of 17 global development goals that aim to contribute to global sustainable development and to tackle broad topics such as poverty, health, education, energy, global warming and gender equality.

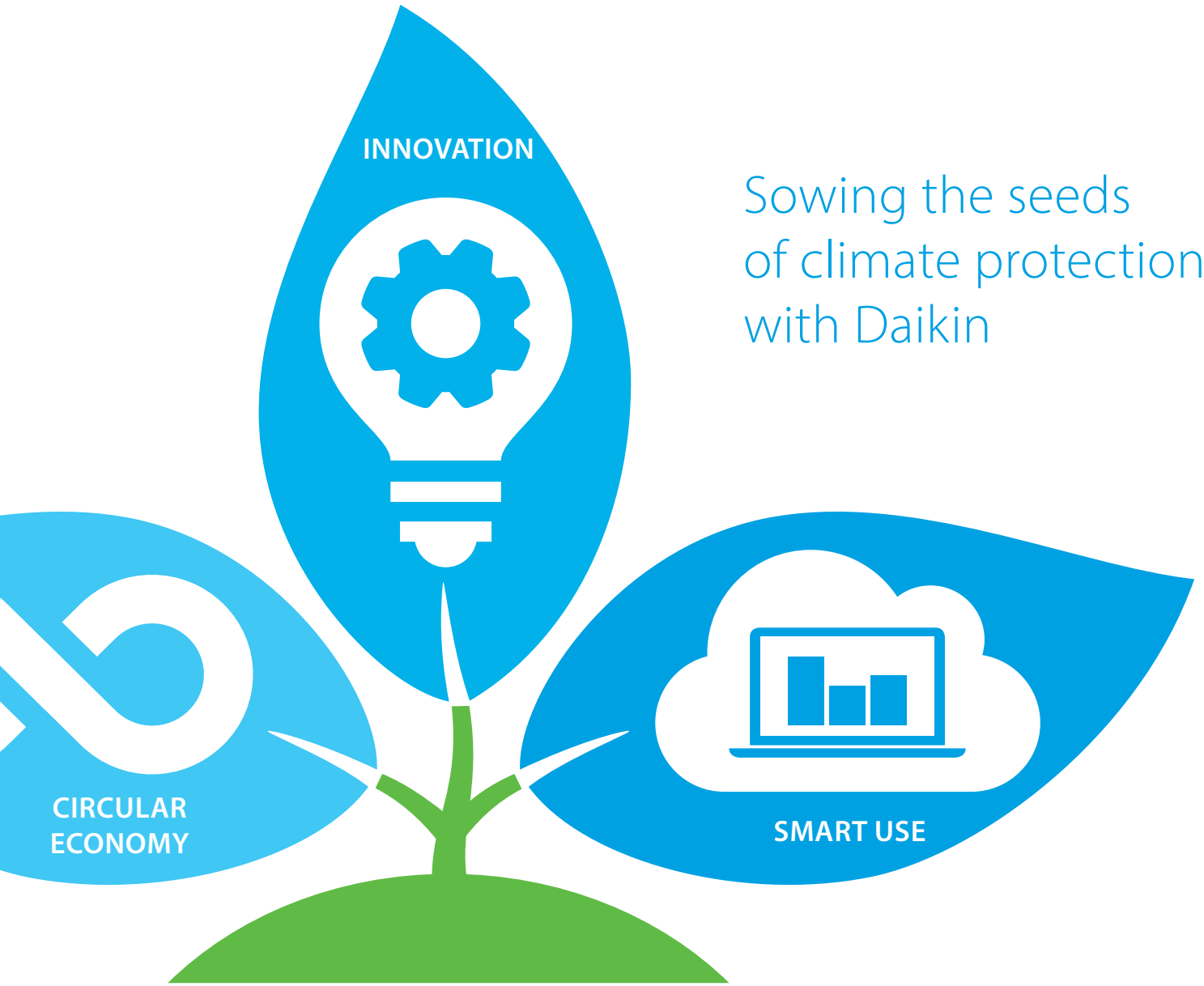
The target date set for the SDGs to be achieved is 2030. For more information on the Sustainable Development Goals, please visit: sdgs.un.org/goals

BREEAM®

If you're also committed to explore sustainable solutions that allow you to increase the market value and decrease the running costs of your building, BREEAM and this brochure is your ideal guidance. As a **BREEAM expert**, Daikin offers **advice** and the **solutions** to reach the **sustainable performance of your building** you want within the budget you foresee.

Determined to reduce our environmental footprint and the one of our customers, we aim to be CO_2-neutral by 2050. A circular economy, innovation and smart use – these are the stepping stones on our path.

For more information visit: daikin.eu/building-a-circular-economy



Sowing the seeds of climate protection with Daikin

Through a circular economy

- Re-use refrigerants through L∞P by Daikin
- Enable customers to create their own circular economy of refrigerants through the recover-reclaim-reuse program

Through innovation

- Introducing lower GWP refrigerants such as R-32, R-1234ze, ...
- Offer high seasonal efficiencies
- Maximise efficiency 24/7 by deploying unique auto cleaning filters
- Adapted systems for well insulated or passive buildings

Through smart use

- Rigorously follow up on energy consumption via the Daikin Cloud Plus and Daikin On Site
- Factor in expert advice to continuously optimise system efficiency
- Enable predictive maintenance to ensure optimum operation and uptime
- Prevent energy waste with smart key cards and sensors

What is BREEAM?

BREEAM (British Research Establishment Environmental Assessment Method) is **a certification system that recognises sustainable buildings that exceed national standards**. As an internationally leading quality label, it provides investors and building owners the guidelines to focus sustainability in building design as well as the environmental impact of products in buildings.

The BREEAM label assesses the overall building concept in **10 different categories**. **Credits** are awarded and weighted for each category in order to generate the **final score for the building**, in levels from 'pass' to 'outstanding'. The final BREEAM building score recognises the effort the investor or building owner have done and result in increased property, leasing or renting value.

Daikin contributes in 7 BREEAM categories:


Management


Health & Wellbeing


Energy


Materials


Waste


Pollution


Innovation


Land Use


Transport


Water

Why BREEAM?

BREEAM offers many advantages for project developers, building tenants and building owners:

Highly improved quality of life for the building user

- Improved comfort
- Easier to attract talent
- Higher work efficiency
- Lower sick rates

High building value for the developer and owner

- Higher selling and rental prices (up to 20%!)
- Fast sale or rent out
- Higher project ROI

Lower operational, maintenance and refurbishment costs

- Lower running costs thanks to highly efficient building technologies
- Lower renovation costs thanks to building flexibility and longer compliancy with legislation

Lower environmental impact of the building

- Lower CO_2 footprint of the building
- Cleaner technologies for better health and pollution reduction
- Better waste management
- Efficient use of land and resources

Daikin, your partner for your green project

Choosing the sustainable path is no longer a matter of choice, it's an obligation. As every building is unique, it requires a different solution to match its unique properties. It is essential to have an **HVAC partner** like Daikin, with knowledge and portfolio **to achieve your BREEAM objectives while staying within budget**.

Our HVAC total solutions increase the environmental value of buildings and enhance the working environment of tenants. Integration of Daikin technologies will therefore contribute to the overall sustainability level of the building and enable you **to reach a BREAAM Excellent or Outstanding score**.

Daikin heat pumps can contribute in
7 out of 10 BREEAM categories

and achieve
29~50 BREEAM credits*

* Feasibility analysis done by Daikin

Scan the code to download

Save time by using our in-depth BREEAM assessment sheet, created by our team of experts, as base of evidence towards assessors when applying for BREEAM credits.

Why Daikin?

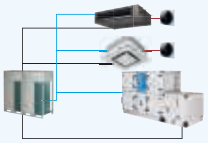
to maximize your BREEAM rating

1. Team up with our own **accredited professionals (AP's)** assisting you to achieve your green building certification.
2. A global leader with local manufacturing service infrastructure and resources to provide **oustanding aftercare support**, advanced commissioning and hand-over.
3. Daikin remote monitoring services ensure a **pro-active aftercare,** by detecting excessive energy use or potential issues before they occur to maximise system lifetime and minimize operational costs.
4. **First class Indoor Air Quality** thanks to low VOC emission, optimal thermal zoning fresh air supply, monitoring and a low acoustic performance.
5. **Responsible sourcing and waste reduction**: BES6001 and ISO14001 certification delivers extra credits for the project.
6. Low carbon heating, cooling, ventilation and refrigeration thanks to **market-leading seasonal efficiency**.
7. Reduced environmental impact thanks to **refrigerant leak detection** systems and reuse of existing refrigerant through the **L∞P by Daikin** program.
8. High quality and performant products result in a **positive life cycle analysis**.
9. Our system are designed to be **easily adaptable** and upgradable to meet future building demands

Find out in which categories Daikin gains credits in the BREEAM International New Construction V6.0 2021 on the next pages.

VRV

Credits related to VRV solutions

Category	Page	Section	Objective	Maximum credits that can be obtained VRV	
Management	page 10	MAN 02	Promote the use of life cycle costing and service life planning and the sharing of data to raise awareness and understanding.	1	
		MAN 04	Encourage a properly planned handover and commissioning process that reflects the needs of the building occupants.	2	
		MAN 05	Offer one-year post-handover support for building occupants, ensuring alignment with design intent and operational needs, facilitating smooth operation and adaptation.	2	
Health & Wellbeing	page 12	HEA 02	Recognise and encourage a healthy internal environment through the specification and installation of appropriate ventilation, equipment and finishes.	2	
		HEA 04	Ensure that appropriate thermal comfort levels are achieved through design, and controls are selected to maintain a thermally comfortable environment for occupants within the building.	3	
		HEA 05	Assure the building's acoustic performance, including sound insulation meets the appropriate standards for its purpose.	1	
Energy	page 14	ENE 01	Design buildings to minimise operational energy demand, primary energy consumption, and CO_2 emissions	Up to 13	
		ENE 02	Offer energy sub-metering to enable post-handover performance comparison with targets, enhancing management insights and effectively addressing any performance gaps.	2	
		ENE 04	Encourage the adoption of design measures which reduce building energy demand - and associated carbon emissions - and maximize on-site renewables.	1	
Materials	page 16	MAT 01	Recognise and encourage the use of robust and appropriate life cycle assessment tools and consequently the specification of construction materials with a low environmental impact (including embodied carbon) over the full life cycle of the building.	Up to 7	
		MAT 03	Promote the specification and procurement of responsibly sourced construction products	1	
		MAT 06	Optimize material efficiency to reduce environmental impact while maintaining building's structural integrity, durability, and service life.	1	
Waste	page 18	WST 01	Promote resource efficiency via the effective and appropriate management of construction waste.	2	
		WST 05	Mitigate the impact of extreme weather conditions arising from climate change over the lifespan of the building	1	
		WST 06	Accommodate future changes of use of the building over its lifespan	2	
Pollution	page 20	POL 01	Reduce the level of greenhouse gas emissions arising from the leakage of refrigerants used to heat or cool the building.	Up to 3	
		POL 02	Contribute to a reduction in local Nox emission levels through the use of low emission heat sources in the building	2	
		POL 05	Minimize potential noise from new development's fixed installations to prevent disturbance to neighboring noise-sensitive structures.	1	
Innovation	page 22	MAN 05	Gather energy data, set targets, optimize controls for reduction, and share feedback with developers for future project energy efficiency enhancements.	Up to 1	
		ENE 01	Report energy consumption targets by end use, design assumptions and input data	Up to 2	
				Up to 50 credits	

Credits related to Applied systems (Chillers, Air handling units, Fan coil units) ..... page 29

Detailed credit information

Management

This category encourages the adoption of sustainable management practices in connection with design, construction, commissioning, handover and aftercare activities to ensure that robust sustainability objectives are set and followed through into the operation of the building.

Issues within this category focus on embedding sustainability actions through the key stages of design, procurement and initial occupation from the initial project brief stage to the appropriate provision of aftercare.

MAN 02 – Life Cycle Cost (LCC)

3 credits can be scored in the below assessment criteria:

1. Elemental life cycle cost (LCC)
2. **Component level LCC options appraisal**
3. Capital cost reporting

VRV IV / VRV 5 heat pumps:

+1 CREDIT

Our heat pumps minimise the life cycle costs of the building thanks to the long-lasting quality and upgradability.

Our local support teams (service, key accounts, consulting sales, ...) assist in project management by providing the necessary information on system costs, ROI, servicing, ...

MAN 04 – Commissioning and handover

4 credits can be scored in the below assessment criteria:

1. Commissioning, testing schedule and responsibilities
2. **Commissioning building services**
3. Testing and inspecting building fabric
4. **Handover**

VRV IV / VRV 5 heat pumps:

+2 CREDITS

We provide installation manuals and a schedule of commissioning for the HVAC work, including an overview for commissioning and recommissioning.

Our local service support teams can assist in advanced commissioning and hand-over and can provide an extensive set of documentation to make a user guide and training schedule for HVAC.

MAN 05 – Aftercare support

3 credits can be scored in the below assessment criteria:

1. **Aftercare support**
2. **Seasonal commissioning**
3. Post-occupancy evaluation (POE)

VRV IV / VRV 5 heat pumps:

+2 CREDITS

Our local service infrastructure and resources provide oustanding aftercare support. Also the Daikin Cloud Plus ensures a pro-active aftercare, by detecting potential issues before they occur.

Detailed credit information

Health & Wellbeing

This category encourages an increase in the comfort, health and safety of building occupants, visitors and others within the vicinity.

Issues within this category aim to enhance the quality of life in building by recognizing those that encourage a healthy and safe internal and external environment for occupants.

HEA02 – Indoor air quality

5 credits can be scored in the below assessment criteria:

1. **Indoor Air Quality (IAQ) plan**
2. **Ventilation**
3. Emissions from construction products
4. Post construction indoor air quality measurement
5. Adaptability – Potential for natural ventilation

VRV IV / VRV 5 heat pumps:
+2 CREDITS

Daikin VRV systems have no negative reaction on the VOC and formaldehyde emission on the building. Daikin ventilation units are fully integrateable in the heat pump solution.
The system is also part of the indoor air quality plan (description of the systems in the building + which influence they have on the indoor air quality).

Advantages of direct expansion

VRV systems

The use of refrigerant as heat transfer medium makes our VRV systems highly efficient and allows very precise zone and climate control with a fast response to changing temperatures.

HEA04 – Thermal comfort

3 credits can be scored in the below assessment criteria.

1. **Thermal modelling**
2. **Adaptability for a projected climate change scenario**
3. **Thermal zoning and controls**

VRV IV / VRV 5 heat pumps:

+3 CREDITS

Our heat pumps provide an optimal indoor thermal comfort. Every indoor unit can be individually controlled and has a very fast response to changing temperature conditions, thanks to our direct expansion VRV technology with Variable Refrigerant Temperature.
This results in a positive Predicted Mean Vote (PMV) modeling and Predicted Percentage of Dissatisfied (PPD) measurement.

HEA05 – Acoustic performance

2 credits can be scored in the below assessment criteria:

1. **Indoor ambient noise and sound insulation**
2. Room acoustics

VRV IV / VRV 5 heat pumps:

+1 CREDIT

Our heat pumps satisfy the low acoustic performance of indoor units offering wide range of indoor systems and solutions for acoustic attenuation.
The indoor acoustic values should always be checked with a suitably qualified acoustician (SQA).

Detailed credit information

Energy

This category encourages the specification of energy efficient building solutions, systems and equipment that support the sustainable use of energy in the building and sustainable management in the buidling's operation.

Issues in this section assess measures to improve the inherent energy efficiency of the building, encourage the reduce carbon emissions, and support efficient management throughout the operational phase of a building's life.

ENE01 – Reduction of energy use and carbon emissions

13 credits can be scored in the below assessment criteria:

1. **Calculate energy performance Ratio for New Construction (EPR NC) (up to 9 credits)**
2. **Prediction of operational consumption (up to 4 credits)**

VRV IV / VRV 5 heat pumps:
+1~13
CREDIT(S)

Daikin VRV heat pumps highly contribute to gain up to 13 credits in this category.

Using our heat pumps directly gains 1 credit, however in combination with other energy performant building materials they enable you to reach a BREEAM Excellent score.

Additional exemplary credits can be achieved, refer to the Innovation category for more information.

Remote monitoring reduces energy consumption

From performance monitoring and predictive logic continuously optimise system efficiency, ensuring our systems run with the lowest energy use.

Daikin specialists can analyse the system to proactively avoid breakdowns or energy waste.

ENE02 – Energy monitoring

2 credits can be scored in the below assessment criteria:

1. **Sub-metering by end-use**
2. **Sub-metering by functional or tenanted areas**

VRV IV / VRV 5 heat pumps:

+2 CREDITS

Through our optional intelligent Touch Manager or Daikin Cloud Plus annual energy consumption calculation is possible. This thanks to the permanent data collection and measurements of the energy usage of all energy consumers in the building. Additionally submetering is possible per indoor unit through our PPD (power proportional division) function. Where multiple units are located, the software can calculate the consumption for a zone, tenant area, ...

ENE04 – Low carbon design

3 credits can be scored in the below assessment criteria:

1. **Passive design**
2. Low and zero carbon (LZC) technologies

VRV IV / VRV 5 heat pumps:

+1 CREDIT

Our heat pumps support the passive design strategy of the building and the reduction of CO_2 emission. Our products are also part of the low carbon feasibility study to select the most suitable solution for the building.

Detailed credit information

Materials

This category encourages steps taken to reduce the impact of construction materials through design, construction, maintenance and repair.

Issues in this section focus on the procurement of materials that are sourced in a responsible way and have a low embodied impact over their entire life, including extraction, processing and manufacture and recycling.

MAT01 – Life cycle impacts

7 credits can be scored in the below assessment criteria:

1. **LCA analysis**
2. **EPD**

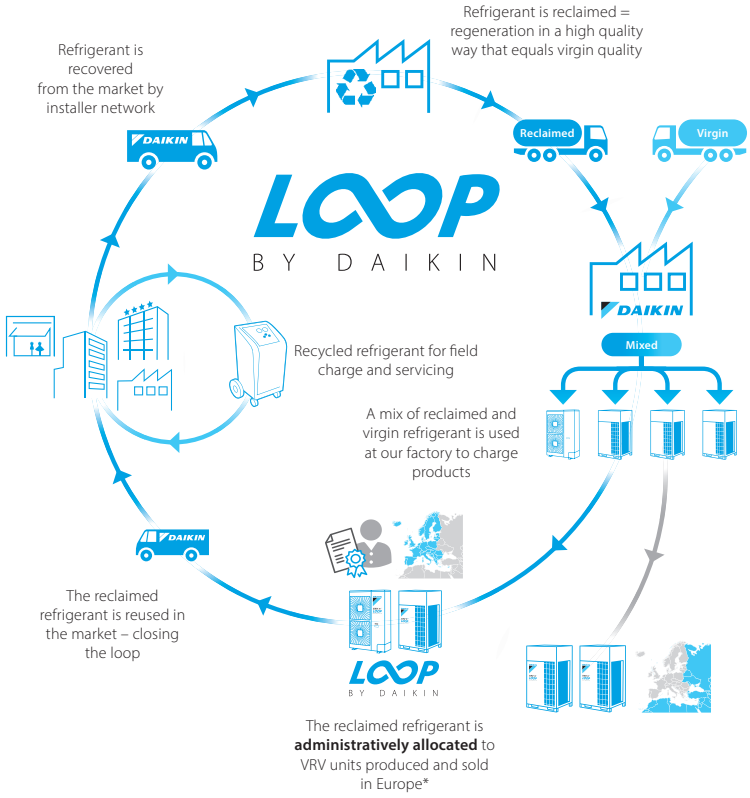
VRV IV / VRV 5 heat pumps:
+1~7
CREDIT(S)

Daikin transparently communicates about it's products life cycle environmental impact. Using the cradle-to-grave LCA methodology we publish Environmental Product Declarations (EPDs) for our products that assist in gaining the EPD credits.

Beyond certification – the circular economy of refrigerants

Daikin goes beyond the current BREEAM assessement, offering all of it's VRV heat pumps produced and sold in Europe* with reclaimed refrigerant. This means that new VRV systems reuse refrigerant and avoid more than 250,000 kg of virgin gas being produced each year.

* EU member states, UK, Bosnia-Herzegovina, Serbia, Montenegro, Kosovo, Albania, North Macedonia, Iceland, Norway, Switzerland.



Scan this code for more information.

MAT03 – Responsible sourcing of construction products

4 credits can be scored in the below assessment criteria:

1. Sustainable Procurement Plan
2. **Using materials with responsible origin**

VRV IV / VRV 5 heat pumps:

+1 CREDIT

Daikin heat pumps carry the ISO14001 (waste reduction) and BES6001 (responsible sourcing) certificate and are mainly locally produced.

MAT06 – Material efficiency

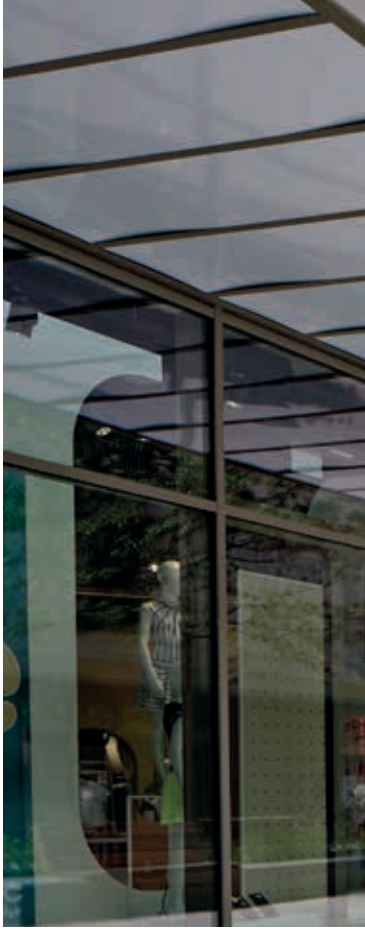
1 credits can be scored in the below assessment criteria:

1. **Efficient use of materials**

VRV IV / VRV 5 heat pumps:

+1 CREDIT

Our heat pumps are designed to be easily adapted when design changes happen throughout the lifetime of the building. Our products are also very durable and components can be easily upgraded, increasing the life time and optimizing material efficiency in the building.



Detailed credit information

Waste

This category encourages the sustainable management (and reuse where feasible) of construction waste, operational waste and waste through future maintenance and repairs associated with the building structure.

By encouraging good design and construction practices, issues in this category aim to reduce the waste arising from the construction and operation of the building, encouraging its diversion from landfill.
It includes recognition of measures to reduce future waste as a result of the need to alter the building in the light of future changes to climate.

WST01 – Construction waste management

3 credits can be scored in the below assessment criteria:

1. **Reduction construction waste**
2. **Diversion of resources from landfill**

VRV IV / VRV 5 heat pumps:

+2 CREDITS

Our product packaging is easy to recycle and during projects we can optimize the waste streams on the construction site by following the waste reduction plan.

WST05 – Adaptation to climate change

1 credit can be scored in the below assessment criteria:

1. **Conduct a climate change adaptation strategy appraisal via risk assessment**

VRV IV / VRV 5 heat pumps:
+1 CREDIT

Our VRV heat pumps are designed to easily adapt to future climate changes. The operation range is very wide to cover potential temperature rise/decline. In addition, our Water Cooled systems are not subjected to outdoor condition changes, as they are installed indoors. Comfortable temperatures can be kept thanks to Variable Refrigerant Temperature control adjusting unit capacity to meet the demand at every point of the day.

WST06 – Design for disassembly and adaptability

2 credits can be scored in the below assessment criteria:

1. **Conduct a study to explore the ease of disassembly, the functional adaptation potential of different design scenarios and develop recommendations or solutions**
2. **The proposed recommendations or solutions are implemented**

VRV IV / VRV 5 heat pumps:
+2 CREDITS

Our VRV heat pumps are extremely flexible to easily adapt to interior or exterior changes. On top of that future expansion of capacity or upgrades to keep up with technological developments is easy as individual components can be replaced.

Detailed credit information

Pollution

This category addresses the prevention and control of pollution and surface water run-off associated with the building's location and use.

Issues in this category aim to reduce the building's impact on surrounding communities and environment arising from light-pollution, noise, flooding and emissions to air, land and water.

POL01 – Impact of refrigerants

4 credits can be scored in the below assessment criteria:

1. Refrigerants have a Global Warming Potential (GWP) ≤ 10 OR DELC CO_{2e} of ≤100 kg
2. **DELC CO_{2e} ≤1000 kg CO_{2e}/kW**
3. **ODP = 0**
4. **Leak detection**

VRV IV heat pumps: **+1 OR 2 CREDITS**

VRV 5 heat pumps: **+3 CREDITS**

All our heat pumps use refrigerants with an ODP of 0. Our VRV 5 heat pumps, with R-32 refrigerant, have a DELC CO_{2e} of ≤1000 kg CO_{2e}/kW and have a standard integrated leak detection system.

POL02 – Local air quality

2 credits can be scored in the below assessment criteria:

1. **Heating and hot water is supplied by non-combustion systems (electricity)**
2. **Emissions from combustion systems do not exceed levels set**

VRV IV / VRV5 heat pumps:

+2 CREDITS

Our heat pumps have a low indirect NOx emission, meeting the BREEAM standard.

POL05 – Reduction of noise pollution

1 credit can be scored in the below assessment criteria:

1. **Noise impact assessment compliant with the national standards**

VRV IV / VRV5 heat pumps:

+1 CREDIT

Our VRV Heat Pump sound emmissions are well within the BREEAM criteria on noise impact. Our water-cooled units are installed indoors and so no special measures or calculations are needed to comply.

In very sound sensitive environments the sound can easily be further reduced by activating the low noise operation (LNOP) on our units.

Detailed credit information

Innovation

The innovation category provides opportunities for exemplary performance and innovation to be recognised that are not included within - or go beyond - the requirements of the credit criteria.

This includes exemplary performance credits, for where the building meets the exemplary performance levels of a particular issue. It also includes innovative products and processes for which an innovation credit can be claimed, where they have been approved by BRE Global. The cost-saving benefits of innovation are fostered and facilitated by helping encourage, drive and publicise accelerated uptake of innovative measures.

Exemplary credits

Up to 10 exemplary credits can be achieved on a per project Basis.
Daikin can contribute to 3 credits.

MAN05 – Aftercare support

1 credit can be achieved

1 Exemplary level criteria (1 credit)

VRV IV / VRV 5 heat pumps:

+1 CREDIT

Our Service Team in collaboration with Energy Remote Monitoring Centre is able to provide full energy report and recommend optimization of energy use on your building.

ENE01 – Reduction of energy use and carbon emissions

Up to 5 credit can be achieved

1 Post occupancy stage (2 exemplary credits)

2. Beyond zero net regulated carbon (3 exemplary credits)

VRV IV / VRV 5 heat pumps:

+2 CREDITS

iTM + PPD (power proportional division) + NAVI provides actual energy consumption and can produce data based on tenant and functional area. Easily generate operational data on a monthly basis to display actual energy consumption.

VRV total solution at a glance

Typically, many buildings today rely on several separate systems for heating, cooling, air curtain heating and hot water. As a result energy is wasted. To provide a much more efficient alternative, VRV technology has been developed into ...

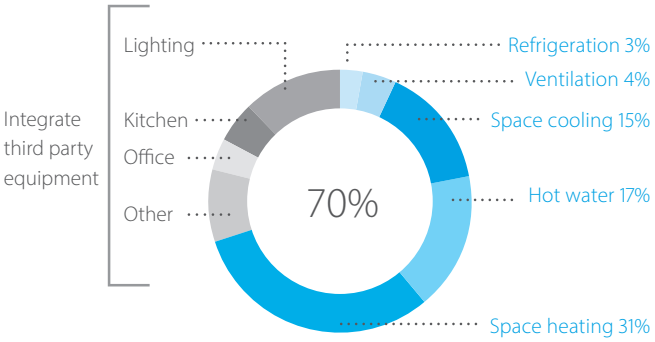
a total solution managing up to

70%

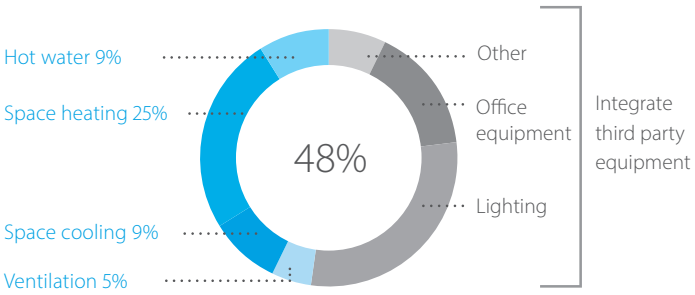
of a buildings energy consumption giving large potential to cost saving

- **Heating and cooling** for year round comfort
- **Hot water** for efficient production of hot water
- **Underfloor heating /cooling** for efficient space heating/cooling
- **Fresh air ventilation** for high quality environments
- **Air curtains** for optimum air separation
- **Controls** for maximum operating efficiency

Average hotel energy consumption



Average office energy consumption



Office total solution application

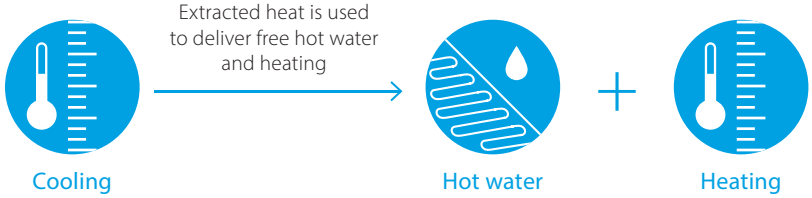
FRESH AIR VENTILATION
› Minimising energy waste by recovering exhaust heat
› Centralised control with the cooling & heating system
› A range of air filtration filters ensures supply of clear air

HEATING AND COOLING
› Wide range of indoor units models to suit the application
› With optional presence sensors
› Individually controlled per zone

CENTRALISED CONTROL
› Complete Daikin Building Management System
› Plug & play connectable
› Smart energy management
› Predictive maintenance

HOT WATER
› Cutting the cost of hot water by use of heat pump technology
› 'Free' hot water production by transferring heat from areas requiring cooling
› Possibility to connect solar panels

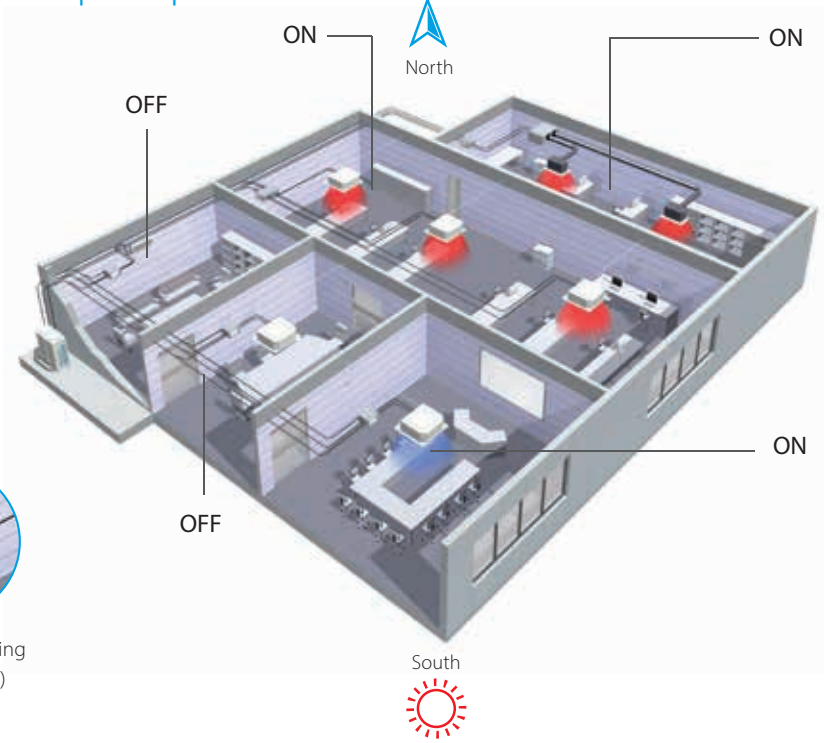
"Free" heat and hot water production
A VRV total solution heat recovery system reuses heat, from for example offices and server rooms, to warm other areas or produce hot water.



VRV system advantages

Air cooled (heat recovery) heat pump

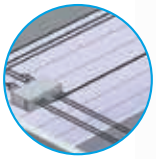
› Fast and easy to install: no need for additional components
› Simultaneous heating AND cooling with individual temperature control*
› "Free" heating and hot water production by transferring heat from areas requiring cooling*
› In rooms where there is no occupation the system can be switched off
› Running costs can be 30 to 40% lower when compared to water fan coil systems
› Operation range from - 25°C ~ 52°C



Components:

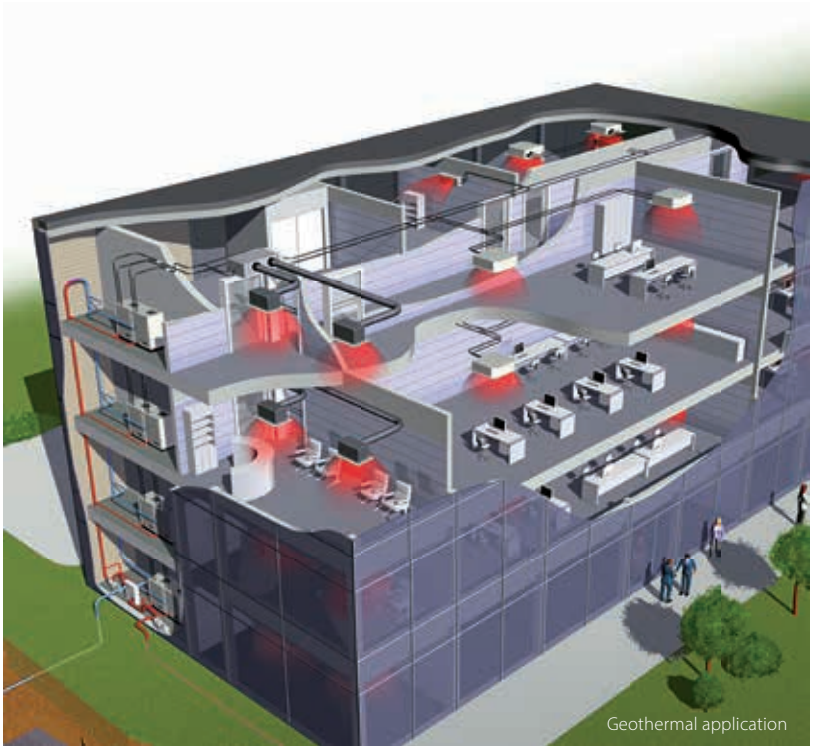

Outdoor unit


Indoor unit

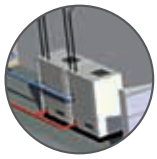

Refrigerant piping (and BS box*)

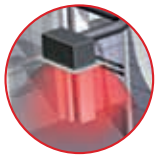
Water cooled (heat recovery) heat pump

› Suitable for high rise and large buildings because of the nearly unlimited possibilities of water piping
› Not affected by outdoor temperature/climate conditions
› Reduce CO_2 emmisions thanks to the use of geothermal energy as a renewable energy source
› Allows heat recovery in the entire building thanks to the storage of energy in the water circuit
› Lower refrigerant levels thanks to the limited distance between outdoor and indoor units
› Very compact & stackable units reduce plant room space


Geothermal application

Components:


Outdoor unit


Indoor unit


Refrigerant piping (and BS box*)


(Geothermal) water loop

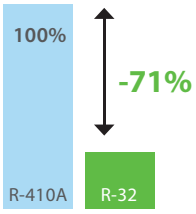
* VRV heat recovery only

Designed for the future

Definitely the best air cooled heat pump that Daikin ever made!

VRV 5 S-series

R-32 BLUEVOLUTION



Lower CO_2 equivalents thanks to R-32 refrigerant

› R-32 Global Warming Potential (GWP) is 68% lower than R-410A
› 15% less refrigerant charge
› Leading to a **GWP reduction of 71%** on system level!

-71%
potential global warming impact

ErP 2021 COMPLIANT

Industry-leading real life efficiencies

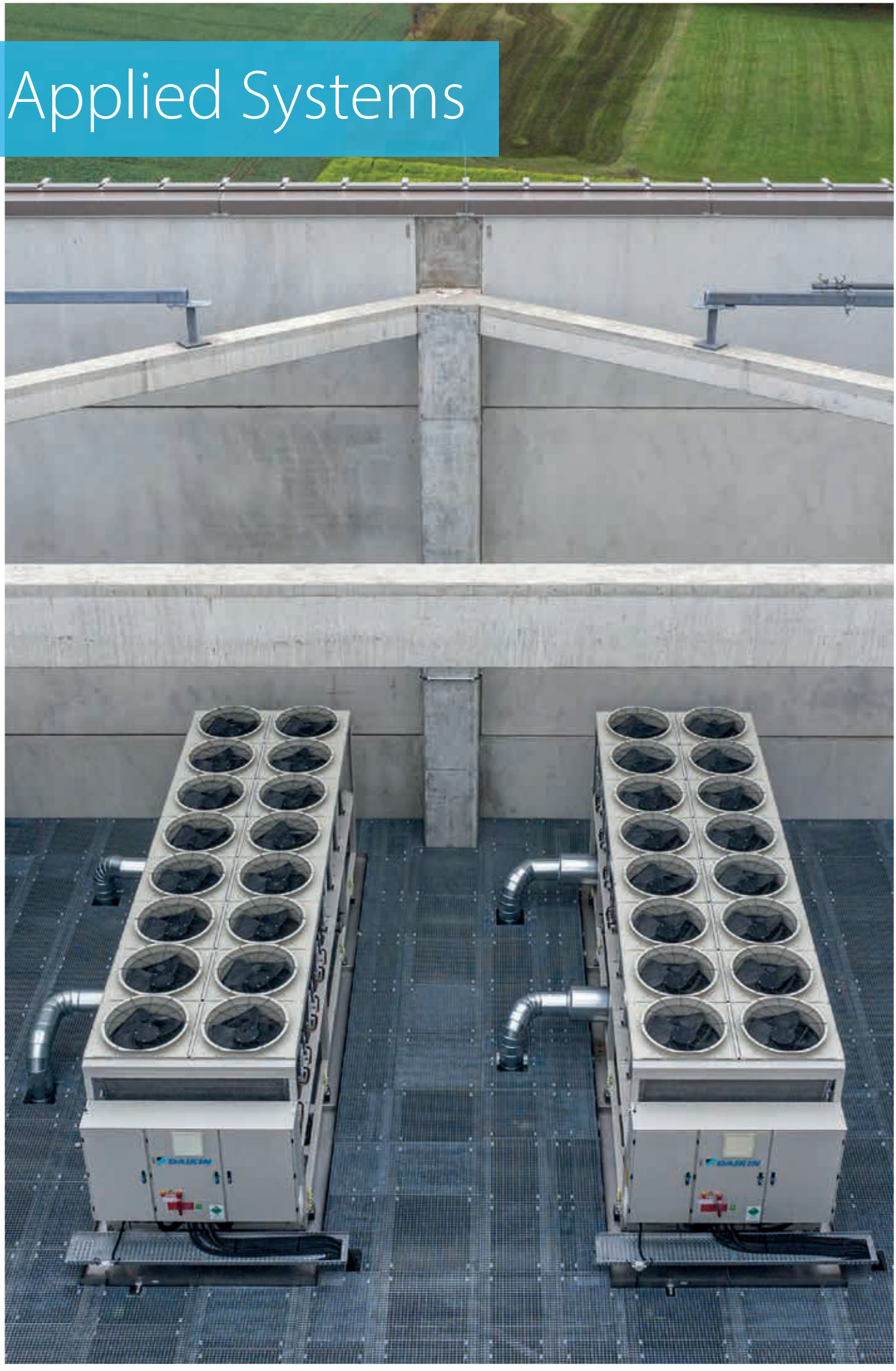
› Exceeding the ErP 2021 ecodesign legislation
› Tested with our most sold indoor units

Unique Variable Refrigerant Temperature

Variable Refrigerant Temperature

› The biggest leap in efficiency since the inverter compressor
› Continuous adjustment of both the inverter compressor speed and the refrigerant temperature, ensuring the necessary capacity to meet the building load with the highest efficiency at all times!

Applied Systems



Credits related to
Chiller solutions

Category	Page	Section	Objective	Chillers	Air Handling Unit	Fan Coil Units	Maximum credits that can be obtained	
Management	page 30	MAN 02	Promote the use of life cycle costing and service life planning and the sharing of data to raise awareness and understanding.	✓	✓	✓	1	
		MAN 04	Encourage a properly planned handover and commissioning process that reflects the needs of the building occupants.	✓	✓	✓	2	
		MAN 05	Offer one-year post-handover support for building occupants, ensuring alignment with design intent and operational needs, facilitating smooth operation and adaptation.	✓	✓	✓	2	
Health & Wellbeing		HEA 02	Recognise and encourage a healthy internal environment through the specification and installation of appropriate ventilation, equipment and finishes.	-	✓	-	2	
		HEA 04	Ensure that appropriate thermal comfort levels are achieved through design, and controls are selected to maintain a thermally comfortable environment for occupants within the building.	-	✓	✓	3	
		HEA 05	Assure the building's acoustic performance, including sound insulation meets the appropriate standards for its purpose.	-	✓	✓	1	
Energy	page 32	ENE 01	Design buildings to minimise operational energy demand, primary energy consumption, and CO_2 emissions	✓	✓	✓	9-13	
		ENE 02	Offer energy sub-metering to enable post-handover performance comparison with targets, enhancing management insights and effectively addressing any performance gaps.	-	✓	-	2	
		ENE 04	Encourage the adoption of design measures which reduce building energy demand - and associated carbon emissions - and maximize on-site renewables.	✓	✓	✓	1	
Waste	page 34	WST 01	Promote resource efficiency via the effective and appropriate management of construction waste.	✓	✓	✓	2	
		WST 05	Mitigate the impact of extreme weather conditions arising from climate change over the lifespan of the building	-	✓	-	1	
Pollution	page 36	POL 01	Reduce the level of greenhouse gas emissions arising from the leakage of refrigerants used to heat or cool the building.	✓	-	-	4	
		POL 02	Contribute to a reduction in local Nox emission levels through the use of low emission heat sources in the building	✓	-	-	2	
		POL 05	Minimize potential noise from new development's fixed installations to prevent disturbance to neighboring noise-sensitive structures.	✓	✓	✓	1	
Innovation	page 38	MAN 05	Gather energy data, set targets, optimize controls for reduction, and share feedback with developers for future project energy efficiency enhancements.	✓	-	-	1	
		ENE 01	Report energy consumption targets by end use, design assumptions and input data	✓	-	-	2	

Up to 40 credits

Credits related to:

- Air Handling Units ..... page 41
- Fan Coil Units ..... page 53
- VRV ..... page 9

Detailed credit information

Management

This category encourages the adoption of sustainable management practices in connection with design, construction, commissioning, handover and aftercare activities to ensure that robust sustainability objectives are set and followed through into the operation of the building.

Issues within this category focus on embedding sustainability actions through the key stages of design, procurement and initial occupation from the initial project brief stage to the appropriate provision of aftercare.

MAN 02 – Life Cycle Cost (LCC)

3 credits can be scored in the below assessment criteria:

1. Elemental life cycle cost (LCC)
2. **Component level LCC options appraisal**
3. Capital cost reporting

Chillers and heat pumps:
+1 CREDIT

Our chillers and heat pumps minimise the life cycle costs of the building thanks to the long-lasting quality and upgradability.

Our local support teams (service, key accounts, consulting sales, ...) assist in project management by providing the necessary information on system costs, ROI, servicing, ...

MAN 04 – Commissioning and handover

4 credits can be scored in the below assessment criteria:

1. Commissioning, testing schedule and responsibilities
2. **Commissioning building services**
3. Testing and inspecting building fabric
4. **Handover**

Chillers and heat pumps: **+2** CREDITS

We provide installation manuals and a schedule of commissioning for the HVAC work, including an overview for commissioning and recommissioning.

Our local service support teams can assist in advanced commissioning and hand-over and can provide an extensive set of documentation to make a user guide and training schedule for HVAC.

MAN 05 – Aftercare support

3 credits can be scored in the below assessment criteria:

1. **Aftercare support**
2. **Seasonal commissioning**
3. Post-occupancy evaluation (POE)

Chillers and heat pumps: **+2** CREDITS

Our local service infrastructure and resources provide outstanding aftercare support. Chillers, heat pumps and multipurpose units' operation can be monitored by using Daikin on Site, enabling access to multiple operating parameters to properly manage preventive and corrective maintenance.

Detailed credit information

Energy

This category encourages the specification of energy efficient building solutions, systems and equipment that support the sustainable use of energy in the building and sustainable management in the buidling's operation.

Issues in this section assess measures to improve the inherent energy efficiency of the building, encourage the reduce carbon emissions, and support efficient management throughout the operational phase of a building's life.

ENE01 – Reduction of energy use and carbon emissions

13 credits can be scored in the below assessment criteria:

1. **Calculate energy performance Ratio for New Construction (EPR NC) (up to 9 credits)**
2. **Prediction of operational consumption (up to 4 credits)**

Chillers and heat pumps:
+1~13
CREDIT(S)

Daikin chillers and heat pumps highly contribute to gain up to 13 credits in this category.

Using our heat pumps directly gains 1 credit, however in combination with other energy performant building materials they enable you to reach a BREEAM Excellent score.
Daikin can deliver part load energy performance curves, enabling to reach BREEAM Outstanding score. Please consult with local Daikin expert for energy performance curves.

Additional exemplary credits can be achieved, refer to the Innovation category for more information.

Remote monitoring reduces energy consumption

From performance monitoring and predictive logic continuously optimise system efficiency, ensuring our systems run with the lowest energy use.

Daikin specialists can analyse the system to proactively avoid breakdowns or energy waste.

ENE04 – Low carbon design

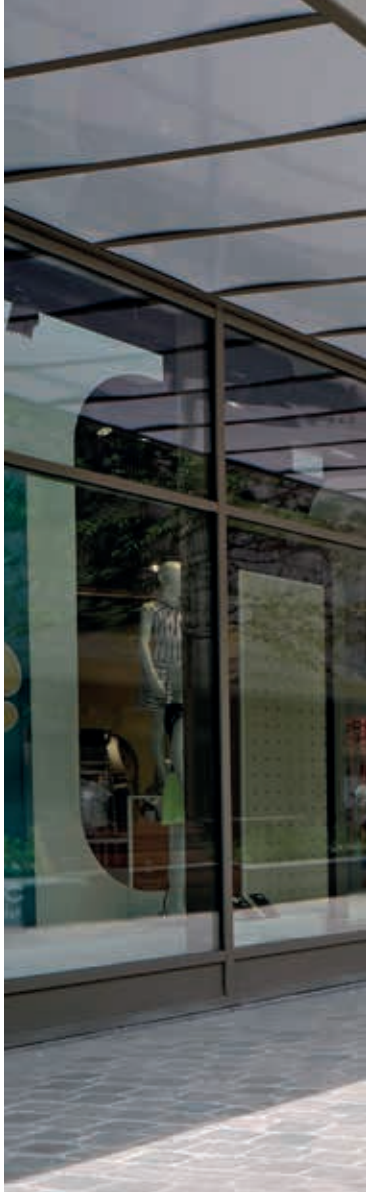
3 credits can be scored in the below assessment criteria:

1. **Passive design**
2. Low and zero carbon (LZC) technologies

Chillers and heat pumps:

+1 CREDIT

Our chillers and heat pumps support the passive design strategy of the building and the reduction of CO_2 emission.



Detailed credit information

Waste

This category encourages the sustainable management (and reuse where feasible) of construction waste, operational waste and waste through future maintenance and repairs associated with the building structure.

By encouraging good design and construction practices, issues in this category aim to reduce the waste arising from the construction and operation of the building, encouraging its diversion from landfill.
It includes recognition of measures to reduce future waste as a result of the need to alter the building in the light of future changes to climate.

WST01 – Construction waste management

3 credits can be scored in the below assessment criteria:

1. **Reduction construction waste**
2. **Diversion of resources from landfill**

Chillers and heat pumps:

+2 CREDITS

Our product packaging is easy to recycle and during projects we can optimize the waste streams on the construction site by following the waste reduction plan.

Detailed credit information

Pollution

This category addresses the prevention and control of pollution and surface water run-off associated with the building's location and use.

Issues in this category aim to reduce the building's impact on surrounding communities and environment arising from light-pollution, noise, flooding and emissions to air, land and water.

POL01 – Impact of refrigerants

4 credits can be scored in the below assessment criteria:

1. **Refrigerants have a Global Warming Potential (GWP) ≤ 10 OR DELC CO_{2e} of ≤100 kg**
2. **DELC CO_{2e} ≤1000 kg CO_{2e}/kW**
3. **ODP = 0**
4. **Leak detection**

Chillers and heat pumps:
+3 OR 4 CREDITS

All our chillers and heat pumps use refrigerants with an ODP of 0. Our chillers using R-1234ze have GWP <10. On other product ranges we employ other refrigerants as R-513A, R-32, R-134a which can have a DELC CO_{2e} of ≤100 kg CO_{2e}/kW or ≤1000 kg CO_2e/kW depending on unit size and can have an integrated leak detection system as an option.

POL02 – Local air quality

2 credits can be scored in the below assessment criteria:

1. **Heating and hot water is supplied by non-combustion systems (electricity)**
2. **Emissions from combustion systems do not exceed levels set**

Chillers and heat pumps:

+2 CREDITS

Our chiller and heat pumps have a low indirect Nox emission, meeting the BREEAM standard

POL05 – Reduction of noise pollution

1 credit can be scored in the below assessment criteria:

1. **Noise impact assessment compliant with the national standards**

Chillers and heat pumps:

+1 CREDIT

Chillers and heat pumps sound emissions are within the BREEAM criteria on noise impact, and on many product ranges noise attenuation options can be included in unit's construction to further reduce noise

Detailed credit information

Innovation

The innovation category provides opportunities for exemplary performance and innovation to be recognised that are not included within - or go beyond - the requirements of the credit criteria.

This includes exemplary performance credits, for where the building meets the exemplary performance levels of a particular issue. It also includes innovative products and processes for which an innovation credit can be claimed, where they have been approved by BRE Global. The cost-saving benefits of innovation are fostered and facilitated by helping encourage, drive and publicise accelerated uptake of innovative measures.

Exemplary credits

Up to 10 exemplary credits can be achieved on a per project Basis.
Daikin can contribute to 3 credits.

MAN05 – Aftercare support

1 credit can be achieved

1 Exemplary level criteria (1 credit)

Chillers and heat pumps:

+1 CREDIT

Our Service Team in collaboration with Energy Remote Monitoring Centre is able to provide full energy report and recommend optimization of energy use on your building.

ENE01 – Reduction of energy use and carbon emissions

Up to 5 credit can be achieved

1 Post occupancy stage (2 exemplary credits)

2. Beyond zero net regulated carbon (3 exemplary credits)

Chillers and heat pumps:

+2 CREDITS

Daikin On Site provides actual energy consumption and can produce data based on tenant and functional area. Easily generate operational data on a monthly basis to display actual energy consumption.

A.H.U.

Credits related to Air Handling Unit solutions

Category	Page	Section	Objective	Chillers	Air Handling Unit	Fan Coil Units	Maximum credits that can be obtained	
Management	page 42	MAN 02	Promote the use of life cycle costing and service life planning and the sharing of data to raise awareness and understanding.	✓	✓	✓	1	
		MAN 04	Encourage a properly planned handover and commissioning process that reflects the needs of the building occupants.	✓	✓	✓	2	
		MAN 05	Offer one-year post-handover support for building occupants, ensuring alignment with design intent and operational needs, facilitating smooth operation and adaptation.	✓	✓	✓	2	
Health & Wellbeing	page 44	HEA 02	Recognise and encourage a healthy internal environment through the specification and installation of appropriate ventilation, equipment and finishes.	-	✓	-	2	
		HEA 04	Ensure that appropriate thermal comfort levels are achieved through design, and controls are selected to maintain a thermally comfortable environment for occupants within the building.	-	✓	✓	3	
		HEA 05	Assure the building's acoustic performance, including sound insulation meets the appropriate standards for its purpose.	-	✓	✓	1	
Energy	page 46	ENE 01	Design buildings to minimise operational energy demand, primary energy consumption, and CO_2 emissions	✓	✓	✓	9-13	
		ENE 02	Offer energy sub-metering to enable post-handover performance comparison with targets, enhancing management insights and effectively addressing any performance gaps.	-	✓	-	2	
		ENE 04	Encourage the adoption of design measures which reduce building energy demand - and associated carbon emissions - and maximize on-site renewables.	✓	✓	✓	1	
Waste	page 48	WST 01	Promote resource efficiency via the effective and appropriate management of construction waste.	✓	✓	✓	2	
		WST 05	Mitigate the impact of extreme weather conditions arising from climate change over the lifespan of the building	-	✓	-	1	
Pollution	page 50	POL 01	Reduce the level of greenhouse gas emissions arising from the leakage of refrigerants used to heat or cool the building.	✓	-	-	4	 R-1234ze R-32
		POL 02	Contribute to a reduction in local Nox emission levels through the use of low emission heat sources in the building	✓	-	-	2	
		POL 05	Minimize potential noise from new development's fixed installations to prevent disturbance to neighboring noise-sensitive structures.	✓	✓	✓	1	
Innovation		MAN 05	Gather energy data, set targets, optimize controls for reduction, and share feedback with developers for future project energy efficiency enhancements.	✓	-	-	1	DAIKIN ON SITE
		ENE 01	Report energy consumption targets by end use, design assumptions and input data	✓	-	-	2	

Up to 40 credits

Credits related to:

- Chillers ..... page 29
- Fan Coil Units ..... page 53
- VRV ..... page 9

Detailed credit information

Management

This category encourages the adoption of sustainable management practices in connection with design, construction, commissioning, handover and aftercare activities to ensure that robust sustainability objectives are set and followed through into the operation of the building.

Issues within this category focus on embedding sustainability actions through the key stages of design, procurement and initial occupation from the initial project brief stage to the appropriate provision of aftercare.

MAN 04 – Commissioning and handover

4 credits can be scored in the below assessment criteria:

1. **Commissioning, testing schedule and responsibilities**
2. **Commissioning building services**
3. Testing and inspecting building fabric
4. **Handover**

+3 CREDITS

We provide installation manuals and a schedule of commissioning for the HVAC work, including an overview for commissioning and recommissioning.

Our local service support teams can assist in advanced commissioning and hand-over and can provide an extensive set of documentation to make a user guide and training schedule for HVAC.

MAN 05 – Aftercare

3 credits can be scored in the below assessment criteria:

1. **Aftercare support**
2. **Seasonal commissioning**
3. Post-occupancy evaluation (POE)

+2 CREDITS

Our local service infrastructure and resources provide oustanding aftercare support. Also the Daikin On Site ensures a pro-active aftercare, by detecting potential issues before they occur.

Detailed credit information

Health & Wellbeing

This category encourages an increase in the comfort, health and safety of building occupants, visitors and others within the vicinity.

Issues within this category aim to enhance the quality of life in building by recognizing those that encourage a healthy and safe internal and external environment for occupants.

HEA02 – Indoor air quality

5 credits can be scored in the below assessment criteria:

1. **Indoor Air Quality (IAQ) plan**
2. **Ventilation**
3. Emissions from construction products
4. Post construction indoor air quality measurement
5. Adaptability – Potential for natural ventilation

+2 CREDITS

Daikin AHUs are part of the indoor air quality plan and they actively contribute to minimise indoor air pollution during design, construction and occupation of the building.
Moreover, Daikin AHUs can provide the adequate fresh air to the building in accordance with the criteria of different national standards for ventilation. Then, a system of filters up to HEPA14 and Daikin IEQ (Indoor Environmental Quality) Sensor that monitors, among many other paramenters, CO_2 concentration, reduce air pollution and guarantee an optimal Indoor Air Quality.

HEA04 – Thermal comfort

3 credits can be scored in the below assessment criteria.

1. **Thermal modelling**
2. **Adaptability for a projected climate change scenario**
3. **Thermal zoning and controls**

+3 CREDITS

Daikin AHU's guarantee an optimal thermal comfort in the conditioned spaces; internal winter and summer temperatures can be easily in line with the recommended comfort criteria established in the ISO 7730:2005. The same thermal comfort level can be guaranteed in case of climate change scenario if the AHU has been properly designed. Consequently, Predicted Mean Vote (PMV) and Predicted Percentage of Dissatisfied (PPD) indices will be optimal regardless the climate conditions, also thanks to a precise control system that is able to modulate the component accordingly to outside conditions and internal desired setpoint.

HEA05 – Acoustic performance

4 credits can be scored in the below assessment criteria:

1. **Indoor ambient noise and sound insulation**
2. Room acoustics

+1 CREDIT

AHUs can be designed to reduce as much as possible the sound noise, by acting on the panels insulation material and/or taking advantage to silencers modules mounted, wherever needed, in the AHU.
Among the complete AHU documentation, a sound level report is provided.

Detailed credit information

Energy

This category encourages the specification of energy efficient building solutions, systems and equipment that support the sustainable use of energy in the building and sustainable management in the buidling's operation.

Issues in this section assess measures to improve the inherent energy efficiency of the building, encourage the reduce carbon emissions, and support efficient management throughout the operational phase of a building's life.

ENE01 – Reduction of energy use and carbon emissions

13 credits can be scored in the below assessment criteria:

1. **Calculate energy performance Ratio for New Construction (EPR NC) (up to 9 credits)**
2. Prediction of operational consumption (up to 4 credits)

+1~9
CREDIT(S)

Daikin AHUs, with their high efficient components and advanced control strategies, in combination with other energy performant building materials and components, highly contribute to gain up to 9 points, reaching a BREEAM Excellent or Outstanding score.

ENE02 – Energy monitoring

2 credits can be scored in the below assessment criteria:

1. **Sub-metering by end-use**
2. **Sub-metering by functional or tenanted areas**

+2 CREDITS

Through our Daikin On Site annual energy consumption calculation is possible. This thanks to the permanent data collection and measurements of the energy usage of all energy consumers in the building.

ENE04 – Low carbon design

3 credits can be scored in the below assessment criteria:

1. **Passive design**
2. Low and zero carbon (LZC) technologies

+1 CREDIT

Our heat pumps support the passive design strategy of the building and the reduction of CO_2 emission.

Detailed credit information

Waste

This category encourages the sustainable management (and reuse where feasible) of construction waste, operational waste and waste through future maintenance and repairs associated with the building structure.

By encouraging good design and construction practices, issues in this category aim to reduce the waste arising from the construction and operation of the building, encouraging its diversion from landfill. It includes recognition of measures to reduce future waste as a result of the need to alter the building in the light of future changes to climate.

WST01 – Construction waste management

3 credits can be scored in the below assessment criteria:

1. **Reduction construction waste**
2. **Diversion of resources from landfill**

+2 CREDITS

Our product packaging is easy to recycle and during projects we can optimize the waste streams on the construction site by following the waste reduction plan.

WST05 – Adaptation to climate change

1 credit can be scored in the below assessment criteria:

1 Conduct a climate change adaptation strategy appraisal via risk assessment

+1 CREDIT

Daikin AHUs can be designed to easily adapt to future climate changes. The operation range can be very wide to cover potential temperature rise/decline. Comfortable indoor temperatures can be kept thanks to a precise control system that, on turn, adjusts the capacity of coils and other components installed in the AHU to meet the demand at every point of the day.

Detailed credit information

Pollution

This category addresses the prevention and control of pollution and surface water run-off associated with the building's location and use.

Issues in this category aim to reduce the building's impact on surrounding communities and environment arising from light-pollution, noise, flooding and emissions to air, land and water.

POL05 – Reduction of noise pollution

1 credit can be scored in the below assessment criteria:

1 Noise impact assessment compliant with the national standards

+1 CREDIT

AHUs can be designed to reduce as much as possible the sound noise, by acting on the panels insulation material and/or taking advange to silencers modules mounted, wherever needed, in the AHU.
Among the complete AHU documentation, a sound level report is provided.


DAIKIN
SERVICE PARTNER Network

Credits related to
Fan Coil solutions

Category	Page	Section	Objective	Chillers	Air Handling Unit	Fan Coil Units	Maximum credits that can be obtained	
Management	page 54	MAN 02	Promote the use of life cycle costing and service life planning and the sharing of data to raise awareness and understanding.	✓	✓	✓	1	
		MAN 04	Encourage a properly planned handover and commissioning process that reflects the needs of the building occupants.	✓	✓	✓	2	
		MAN 05	Offer one-year post-handover support for building occupants, ensuring alignment with design intent and operational needs, facilitating smooth operation and adaptation.	✓	✓	✓	2	
Health & Wellbeing	page 56	HEA 02	Recognise and encourage a healthy internal environment through the specification and installation of appropriate ventilation, equipment and finishes.	-	✓	-	2	
		HEA 04	Ensure that appropriate thermal comfort levels are achieved through design, and controls are selected to maintain a thermally comfortable environment for occupants within the building.	-	✓	✓	3	
		HEA 05	Assure the building's acoustic performance, including sound insulation meets the appropriate standards for its purpose.	-	✓	✓	1	
Energy	page 58	ENE 01	Design buildings to minimise operational energy demand, primary energy consumption, and CO_2 emissions	✓	✓	✓	9-13	
		ENE 02	Offer energy sub-metering to enable post-handover performance comparison with targets, enhancing management insights and effectively addressing any performance gaps.	-	✓	-	2	
		ENE 04	Encourage the adoption of design measures which reduce building energy demand - and associated carbon emissions - and maximize on-site renewables.	✓	✓	✓	1	
Waste	page 60	WST 01	Promote resource efficiency via the effective and appropriate management of construction waste.	✓	✓	✓	2	
		WST 05	Mitigate the impact of extreme weather conditions arising from climate change over the lifespan of the building	-	✓	-	1	
Pollution	page 61	POL 01	Reduce the level of greenhouse gas emissions arising from the leakage of refrigerants used to heat or cool the building.	✓	-	-	4	
		POL 02	Contribute to a reduction in local Nox emission levels through the use of low emission heat sources in the building	✓	-	-	2	
		POL 05	Minimize potential noise from new development's fixed installations to prevent disturbance to neighboring noise-sensitive structures.	✓	✓	✓	1	
Innovation		MAN 05	Gather energy data, set targets, optimize controls for reduction, and share feedback with developers for future project energy efficiency enhancements.	✓	-	-	1	
		ENE 01	Report energy consumption targets by end use, design assumptions and input data	✓	-	-	2	

Up to 40 credits

Credits related to:

- Chillers ..... page 29
- Air Handling Units ..... page 41
- VRV ..... page 9

Detailed credit information

Management

This category encourages the adoption of sustainable management practices in connection with design, construction, commissioning, handover and aftercare activities to ensure that robust sustainability objectives are set and followed through into the operation of the building.

Issues within this category focus on embedding sustainability actions through the key stages of design, procurement and initial occupation from the initial project brief stage to the appropriate provision of aftercare.

MAN 04 – Commissioning and handover

4 credits can be scored in the below assessment criteria:

1. Commissioning, testing schedule and responsibilities
2. **Commissioning building services**
3. Testing and inspecting building fabric
4. **Handover**

+2 CREDITS

We provide installation manuals and a schedule of commissioning for the HVAC work, including an overview for commissioning and recommissioning.

Our local service support teams can assist in advanced commissioning and hand-over and can provide an extensive set of documentation to make a user guide and training schedule for HVAC.

MAN 05 – Aftercare

3 credits can be scored in the below assessment criteria:

1. **Aftercare support**
2. **Seasonal commissioning**
3. Post-occupancy evaluaton (POE)

+2 CREDITS

Our local service infrastructure and resources provide oustanding aftercare support. Also the Daikin On Site ensures a pro-active aftercare, by detecting potential issues before they occur.

Detailed credit information

Health & Wellbeing

This category encourages an increase in the comfort, health and safety of building occupants, visitors and others within the vicinity.

Issues within this category aim to enhance the quality of life in building by recognizing those that encourage a healthy and safe internal and external environment for occupants.

HEA04 – Thermal comfort

3 credits can be scored in the below assessment criteria:

1. **Thermal modelling**
2. **Adaptability for a projected climate change scenario**
3. **Thermal zoning and controls**

+3 CREDITS

Daikin FCU's guarantee an optimal thermal comfort in the conditioned spaces; internal winter and summer temperatures can be easily in line with the recommended comfort criteria established in the ISO 7730:2005. The same thermal comfort level can be guaranteed in case of climate change scenario if the FCU has been properly designed. Consequently, Predicted Mean Vote (PMV) and Predicted Percentage of Dissatisfied (PPD) indices will be optimal regardless the climate conditions. This will be fulfilled thanks to a precise control system and to the Inverter technology, that are able to modulate the component accordingly to outside conditions and internal desired setpoint.

HEA05 – Acoustic performance

4 credits can be scored in the below assessment criteria:

1. **Indoor ambient noise and sound insulation**
2. Room acoustics

+1 CREDIT

Silent units (low noise level fan coils) would contribute to its fulfilment. Among the complete FCU documentation, a sound level report is always provided (with NR, noise rating, values available at selection stage).

Detailed credit information

Energy

This category encourages the specification of energy efficient building solutions, systems and equipment that support the sustainable use of energy in the building and sustainable management in the buidling's operation.

Issues in this section assess measures to improve the inherent energy efficiency of the building, encourage the reduce carbon emissions, and support efficient management throughout the operational phase of a building's life.

ENE01 – Reduction of energy use and carbon emissions

13 credits can be scored in the below assessment criteria:

1. **Calculate energy performance Ratio for New Construction (EPR NC) (up to 9 credits)**
2. Prediction of operational consumption (up to 4 credits)

+1~9
CREDIT(S)

Efficient fan coil equipped with BLDC fan-motor, in combination with other energy performant building materials and components, contributes to the overall efficiency of the building to gain up to 9 points, reaching a BREEAM Excellent or Outstanding score.

ENE04 – Low carbon design

3 credits can be scored in the below assessment criteria:

1. **Passive design**
2. Low and zero carbon (LZC) technologies

+1 CREDIT

Our heat pumps support the passive design strategy of the building and the reduction of CO_2 emission.

Detailed credit information

Waste

This category encourages the sustainable management (and reuse where feasible) of construction waste, operational waste and waste through future maintenance and repairs associated with the building structure.

By encouraging good design and construction practices, issues in this category aim to reduce the waste arising from the construction and operation of the building, encouraging its diversion from landfill. It includes recognition of measures to reduce future waste as a result of the need to alter the building in the light of future changes to climate.

WST01 – Construction waste management

3 credits can be scored in the below assessment criteria:

1. **Reduction construction waste**
2. **Diversion of resources from landfill**

+2 CREDITS

Our product packaging is easy to recycle and during projects we can optimize the waste streams on the construction site by following the waste reduction plan.

Detailed credit information

Pollution

This category addresses the prevention and control of pollution and surface water run-off associated with the building's location and use.

Issues in this category aim to reduce the building's impact on surrounding communities and environment arising from light-pollution, noise, flooding and emissions to air, land and water.

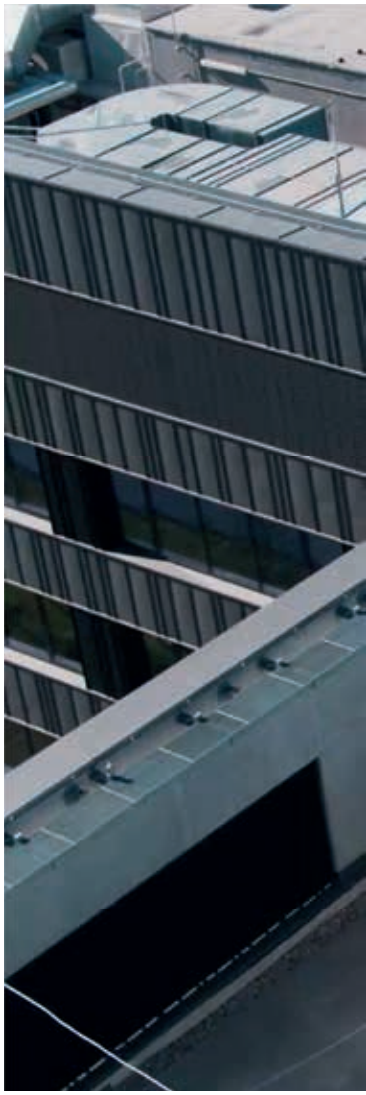
POL05 – Reduction of noise pollution

1 credit can be scored in the below assessment criteria:

1 Noise impact assessment compliant with the national standards

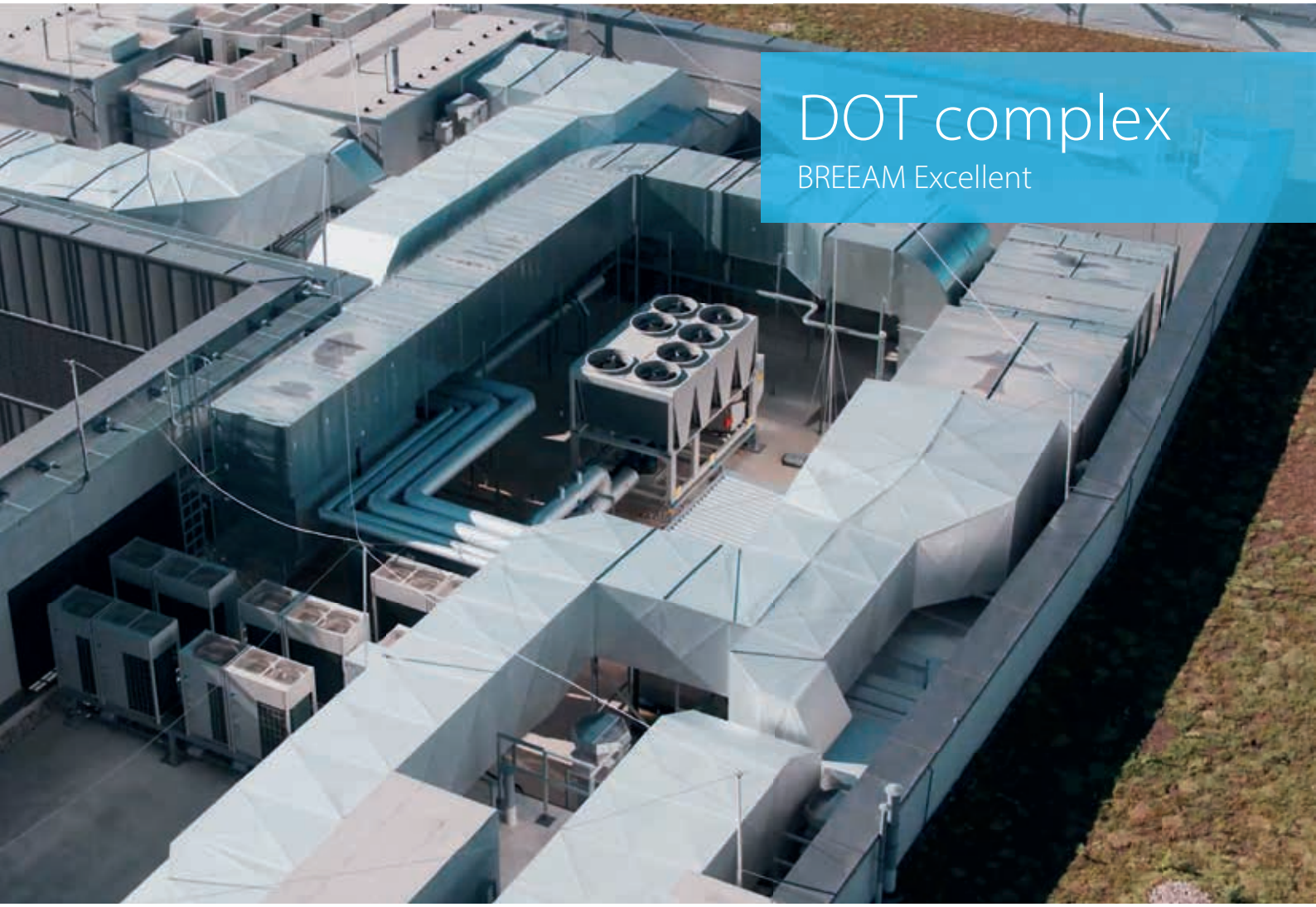
+1 CREDIT

FCU with the BLDC motor and specific control logic are designed to reduce as much as possible the sound noise. Among the complete FCU documentation, a sound level report is provided.



Case studies

Daikin has successfully participated in many green and sustainable projects. Helping builders achieve BREEAM Excellent, LEED Gold, WELL and similar certificates has become one of our specialities – and our case studies prove it!



DOT complex

BREEAM Excellent

The DOT complex consists out of 7 class A buildings with a leasable area of more than 63,000 m^2. Daikin provided a single point of contact for HVAC, by offering the heating, cooling, ventilation and controls.

Comfort cooling and heating

VRV IV heat recovery units were used for comfort cooling & heating. The system offers simultaneous operation in cooling and heating. This allows flexible zoning and better energy management as heat can be recovered. The indoor concealed ceiling units used are only 245 mm high, while delivering 150 Pa of static pressure, making them the slimmest yet most powerful on the market.

Ventilation

3 R-32 chillers provide the capacity for the Air Handling Units. The AHU's provided have air flow rates up to 36,000 m^3/h and are equipped with CO_2 sensors.

Control

The entire solution, including the Sky Air serverroom cooling, is centrally controlled our intelligent Touch Manager mini BMS. Thanks to the PPD (power proportional division) function the total power consumption can easily be divided over the different tenants.

Location

L1 building, DOT complex, Krakow

Building details

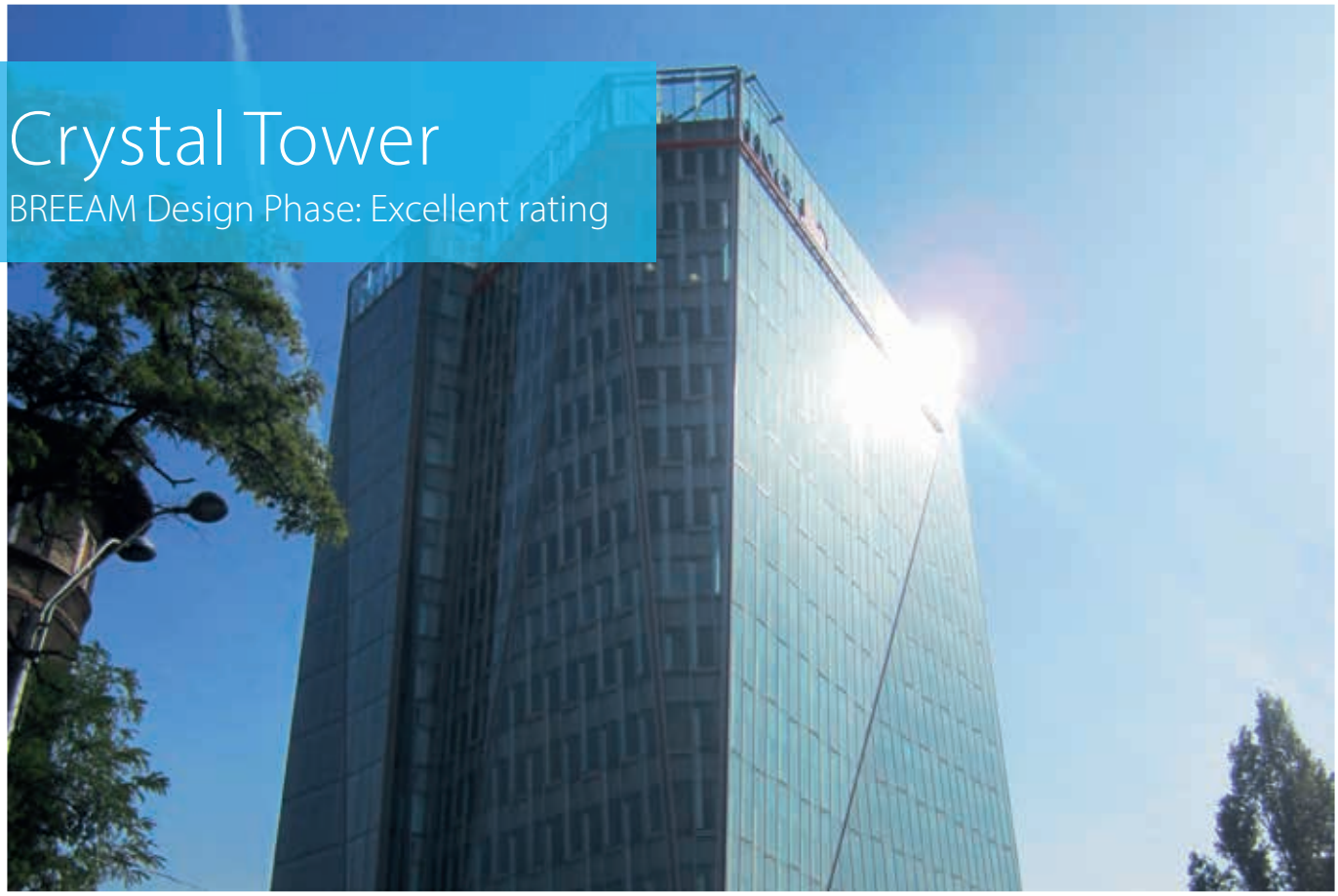
Total usable area: 64.000 m^2
Total capacity: 8.000 kW
L1 building area: 13.450 m^2
L1 building capacity: 1.300 kW
Construction year L1: 2019
No of floors L1 building: 6 + basement

Daikin systems installed L1 building

- 33 VRV IV heat recovery outdoor units
- 51 branch selector boxes
- 325 FXSQ medium static pressure concealed ceiling units
- Sky Air Alpha-series for duty-rotation server room cooling
- 3 multiple-scroll chillers connected to AHU
- 3 Daikin Air Handling Units
- Local wired controllers + 2 iTM mini BMS

Crystal Tower

BREEAM Design Phase: Excellent rating



A great and well-known example of a Daikin Total Solution leading to high energy-efficient HVAC consumption

› A combination of VRV, Sky Air and Applied systems ensuring all offices and common areas are fully air conditioned.

› Water-cooled VRV as the main contributor to total HVAC energy efficiency due to its two-stage heat recovery system.

› Flexibility: individual thermal control and comfort with VRV on each floor and space.

› Problem-free connection between Daikin units and the LonWorks BMS system ensures the building's total energy consumption is properly monitored and controlled.

Location

48 Lancu de Hunedoara Boulevard
Bucharest Romania

Building details

Built-up area: 24,728 m^2
Total usable area: 20,020 m^2
Floors: 4 basements, 15 floors, technical floor
Building height: 72 m
Office space per level: approx. 1,000 m^2

Daikin systems installed

› 67 x VRV water-cooled units
› 2 x VRV outdoor heat pump units
› 289 VRV indoor units (265 ducts, 24 x cassettes)
› 5 x Sky Air with Roundflow Cassettes
› 4 x air-cooled water chillers
› 11 x DMS504B51 (LonWorks gateway)

Awards

› Green Building of the Year 2012 (ROGBC)
› Environmental Social & Sustainability award (ESSA)

Velocity

BREEAM Excellent

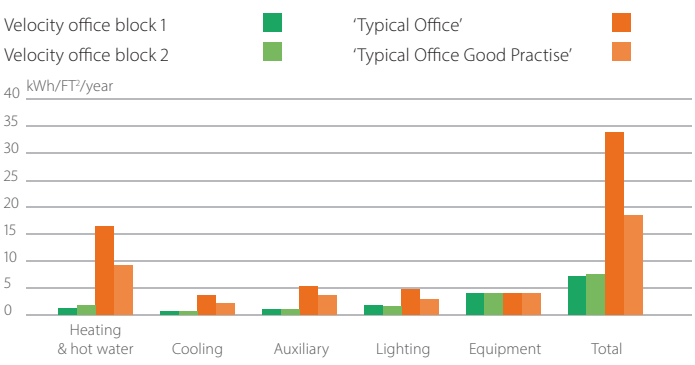
Daikin VRV Heat Recovery system as a big contributor to high Energy Performance of a stylish headquarter office

Cost effective occupation

Velocity, with its strong eco-credentials can demonstrate significant occupation cost savings when compared to a more typical office building in the UK.
The graph below demonstrates the difference in annual energy consumption, per unit floor area, for both Velocity office blocks when compared to the CIBSE* 'Typical Office' benchmark and 'Typical Office'. Good Practise' benchmark built to the Building regulations at the time. A CIBSE 'Typical Office Good Practise' is equivalent to those built between 2006 and 2010.

*Chartered Institute for Building Services Engineers

Energy use (per FT² per year)



Location

Velocity Brooklands, Weybridge, KT13 0SL, United Kingdom

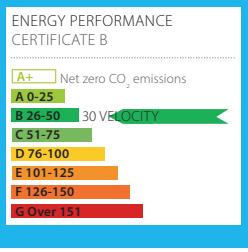
Building details

Total usable area: 9885 m²
Floors: ground floor + 4 floors
Building Height: 19,25 m (3,850 m floor to floor)
Construction year: 2012

Daikin systems installed

› 25 x VRV III Heat Recovery units
› 2 x VRV heat pump outdoor units
› 265 VRV indoor units (Ducted fan coil unit)
› 10 x DCS601C51 (Intelligent controller)

Energy Performance Certificate: B



Perial Asset Management

BREEAM In-Use: Good

- Built in the 1990's, this 4,200 m² office building was refurbished in 2020
- Thermal coatings were installed on the glazing of the south-facing façade, lowering interior temperatures in summer with 2°C.
- The new VRV system was measured to be up to 28% more efficient then the old system
- Thanks to the use of reclaimed refrigerant 156 kg of virigin refrigerant production could be saved

For more in-depth information you can download our assessment sheet, created by our team of experts, to help you increase your building's rating.

You also save time using this sheet as base of evidence towards assessors when applying for BREEAM credits.

Scan this code to download the sheet.

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