Energy Performance Certificate

Non-Domestic buildings and buildings other than dwellings

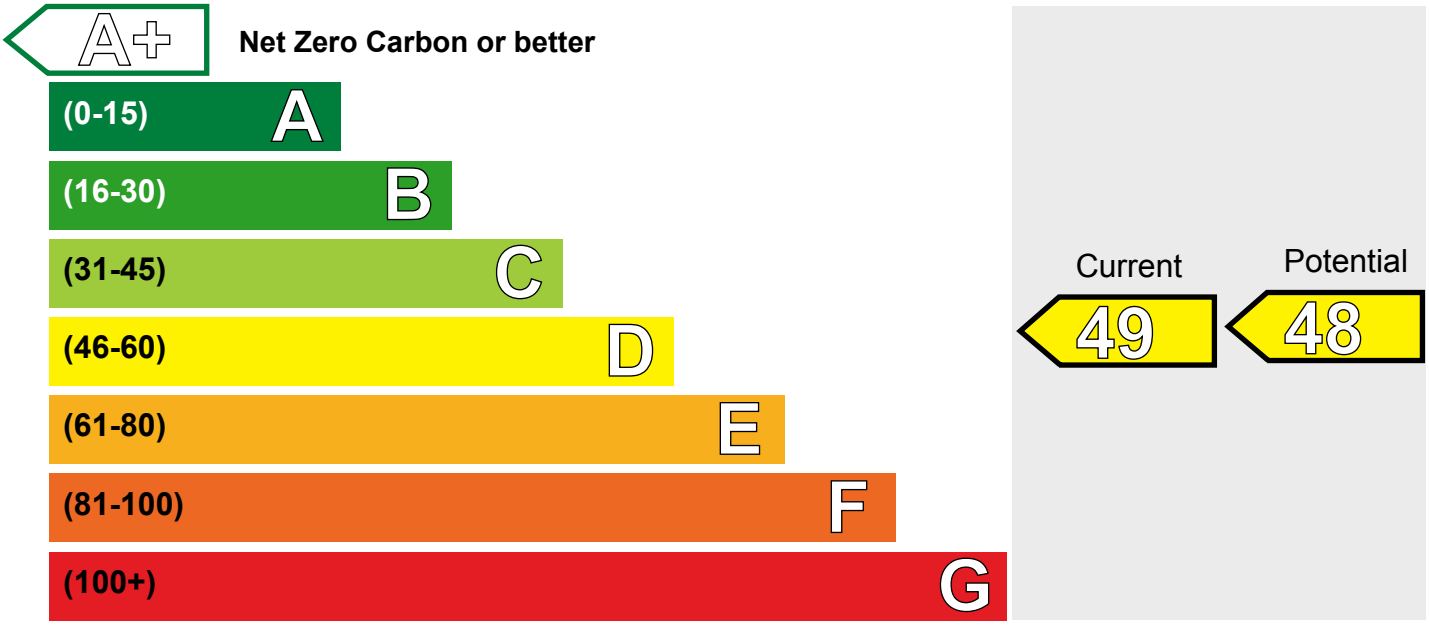
Scotland

2 Dunaskin Court, Glasgow G11 6QJ

Date of assessment:	01 April 2009	**Reference Number:**	0102-3684-5413-0900-9901
Date of certificate:	26 August 2016	**Building type:**	Universities/college
Total conditioned area:	3058.8m^2	**Assessment Software:**	EPCgen, v5.2.g.3
Primary energy indicator:	282 kWh/m^2/yr	**Approved Organisation:**	Elmhurst Energy Systems

Building Energy Performance Rating

Excellent



Very Poor

Approximate Energy Use:	198 kWh per m^2 per year
Approximate Carbon Dioxide Emissions:	49.33 kgCO_2 per m^2 per year

The building energy performance rating is a measure of the effect of a building on the environment in terms of carbon dioxide (CO_2) emissions. The better the rating, the less impact on the environment. The current rating is based upon an assessor's survey of the building. The potential rating shows the effect of undertaking all of the recommended measures listed below. The Recommendations Report which accompanies this certificate explains how this rating is calculated and gives further information on the performance of this building and how to improve it.

Benchmark

A building of this type built to current building regulations at the date of issue of this certificate would have a building energy performance rating of: 55 D

Recommendations for the cost-effective improvement of energy performance

1. Improve insulation on HWS storage.
2. Add time control to heating system.
3. Consider replacing T8 lamps with retrofit T5 conversion kit.
4. Add optimum start/stop to the heating system.

There are additional improvement measures applicable to this building. Refer to the Recommendations Report.

THIS PAGE IS THE ENERGY PERFORMANCE CERTIFICATE WHICH MUST BE AFFIXED TO THE BUILDING AND NOT BE REMOVED UNLESS REPLACED WITH AN UPDATED CERTIFICATE.

Recommendations Report

Background

This section provides additional information regarding the building and your energy assessment.

Building type:	Residential Institutions: Universities and colleges
Total useful floor area:	3059m^2
Main heating fuel:	NaturalGas
Building Environment:	HeatingandNaturalVentilation
Renewable energy source:	CHP generators
Electricity:	Grid supplied

The Recommendations Report provides additional information in support of your Energy Performance Certificate. It was produced in line with the Government's approved calculation methodology and is based upon output from CLG, iSBEM, v5.2.g, SBEM, v5.2.g.3.

This calculates energy used in the heating, hot water provision, lighting and ventilation of your building. Different fuels produce different amounts of carbon dioxide for every kilowatt hour (kWh) of energy used. The calculation methodology therefore applies fuel emission factors to energy use for each fuel used to give an overall rating for your building. This assessment covers all fixed building services but excludes energy used in portable appliances, office equipment and for industrial processes.

As buildings can be used in different ways, energy use is calculated using standard occupancy assumptions which may be different from the way you use your building. The rating also uses national weather information to allow comparison between the performance of similar buildings in different parts of Scotland.

Further information on the assessment process and approved software tools can be found online at: www.scotland.gov.uk/epc.

Recommendations for improvement

This section lists the improvement measures recommended on your Energy Performance Certificate and further action you can take to improve the performance of your building. These measures have been checked by your assessor as being appropriate for your building and are listed under four headings: short payback period, medium payback period, long payback period and other improvement measures.

The calculation tool has automatically produced a set of recommendations which are reviewed by your assessor to ensure that they are relevant to the building and its use. The assessor may add or remove recommendations and may also have commented on the recommendations based upon their professional knowledge and expertise. This may include inserting additional recommendations or measures under ‘other recommendations’ (see below).

Note that these recommendations do not include advice on matters relating to the operation and maintenance of your building as such cannot be identified or represented within the calculation process.

Implementing improvements - legal disclaimer.

The advice provided in this Recommendations Report is intended to be for information only. Recipients of this report are advised to seek further professional advice before making any decision on how to improve the energy performance of the building.

Recommended measures with a short payback period (less than 3 years)

Recommendations (short payback)	Potential Impact
Improve insulation on HWS storage.	LOW
Add time control to heating system.	MEDIUM
Consider replacing T8 lamps with retrofit T5 conversion kit.	MEDIUM
Add optimum start/stop to the heating system.	MEDIUM
In some spaces, the solar gain limit defined in the NCM is exceeded, which might cause overheating. Consider solar control measures such as the application of reflective coating or shading devices to windows.	MEDIUM
Introduce HF (high frequency) ballasts for fluorescent tubes: Reduced number of fittings required.	LOW

Recommended measures with a medium payback period (3 to 7 years)

Recommendations (medium payback)	Potential Impact
Add local temperature control to the heating system.	MEDIUM
Add weather compensation controls to heating system.	MEDIUM
Add local time control to heating system.	MEDIUM
Consider installing an air source heat pump.	HIGH

Recommended measures with a long payback period (more than 7 years)

Recommendations (long payback)	Potential Impact
Consider installing a ground source heat pump.	HIGH
Consider installing building mounted wind turbine(s).	LOW
Consider installing solar water heating.	LOW
Consider installing PV.	LOW

Other measures

This section lists other measures selected by your assessor based upon an understanding of the building and/or a valid existing Recommendations Report.

Your assessor has not identified other measures for this building.

Payback period:

Payback periods are based upon data provided by Good Practice Guides and Carbon Trust energy survey reports and are average figures calculated using a simple payback method. It is assumed that the source data is correct and accurate, using up to date information.

They should be considered indicative. The figures have been calculated as an average across a range of buildings and may therefore differ from the actual payback period for the building being assessed. It is recommended that the cost effectiveness and payback of each suggested measure be further investigated before making any decision on how to improve the energy efficiency of your building.

Carbon Impact:

Each measure is assigned a low, medium or high potential impact on the energy efficiency of your building. This relates to their potential to reduce carbon dioxide emissions arising from energy used in your building. For automatically generated recommendations, the carbon impact is determined by the approved software but may be adjusted by your assessor based upon their knowledge of the building. The impact of 'other recommendations' is determined by the assessor.

Comparative assessment - Feed-in Tariff

Eligibility for standard tariff for solar PV under the DECC Feed-in Tariff initiative is contingent on a minimum energy efficiency requirement being met. This requires a building to have an EPC band of D or better. Further information can be found at: www.decc.gov.uk/fits This requirement is based upon the means of determining EPC band which is used in England & Wales.

If calculated using this process, but using Scottish climate data, your building would currently have an EPC band of B (and a rating of 34).

Requirements under section 63 of the Climate Change (Scotland) Act

From 1 September 2016, regulations require the assessment and improvement of existing non-domestic buildings with an area of more than 1,000 m². See www.gov.scot/section63 for information.

This building is subject to these regulations as it exceeds 1,000 m² in area. However, buildings with energy performance equivalent to that set by the 2002 building regulations are exempt. This EPC assessment shows that your building meets the 2002 standard and no further action is needed to comply with these regulations.

About this document

This report and the accompanying Energy Performance Certificate are valid for a maximum of ten years. These documents cease to be valid where superseded by a more recent assessment of the same building carried out by a member of an Approved Organisation.

Your Energy Performance Certificate and this Recommendations Report for this building were produced following an energy assessment undertaken by an assessor accredited by Elmhurst Energy Systems (www.enspheregroup.com), an Approved Organisation Appointed by Scottish Ministers. The certificate has been produced under the Energy Performance of Buildings (Scotland) Regulations 2008 from data lodged to the Scottish EPC register. You can verify the validity of this document by visiting www.scottishepcregister.org.uk and entering the report reference number (RRN) printed at the top of this page.

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Assessor membership number: EES/017907
Company name/trading name: Ensphere Group Ltd
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Use of this energy performance information

Once lodged by your EPC assessor, this Energy Performance Certificate and Recommendations Report are available to view online at www.scottishepcregister.org.uk, with the facility to search for any single record by entering the property address. This gives everyone access to any current, valid EPC except where a property has a Green Deal Plan, in which case the report reference number (RRN) must first be provided. The energy performance data in these documents, together with other building information gathered during the assessment is held on the Scottish EPC Register and is available to authorised recipients, including organisations delivering energy efficiency and carbon reduction initiatives on behalf of the Scottish and UK governments. A range of data from all assessments undertaken in Scotland is also published periodically by the Scottish Government. Further information on these matters and on Energy Performance Certificates in general, can be found at www.gov.scot/epc.

Energy Performance Certificate

Non-Domestic buildings and buildings other than dwellings

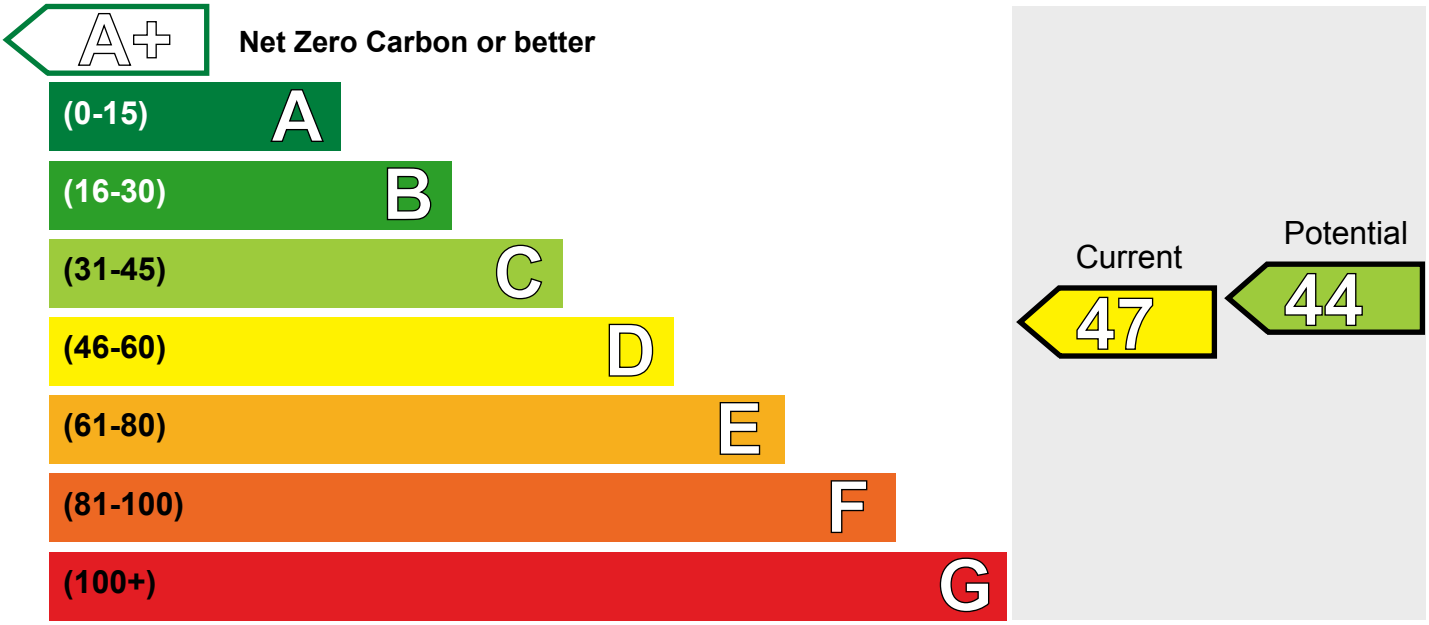
Scotland

3 Dunaskin Court, Glasgow G11 6QJ

Date of assessment:	18 August 2016	**Reference Number:**	0987-1949-5336-0880-9020
Date of certificate:	26 August 2016	**Building type:**	Universities/college
Total conditioned area:	1652.5m^2	**Assessment Software:**	EPCgen, v5.2.g.3
Primary energy indicator:	267 kWh/m^2/yr	**Approved Organisation:**	Elmhurst Energy Systems

Building Energy Performance Rating

Excellent



Very Poor

Approximate Energy Use: 186 kWh per m^2 per year

Approximate Carbon Dioxide Emissions: 46.66 kgCO_2 per m^2 per year

The building energy performance rating is a measure of the effect of a building on the environment in terms of carbon dioxide (CO_2) emissions. The better the rating, the less impact on the environment. The current rating is based upon an assessor's survey of the building. The potential rating shows the effect of undertaking all of the recommended measures listed below. The Recommendations Report which accompanies this certificate explains how this rating is calculated and gives further information on the performance of this building and how to improve it.

Benchmark

A building of this type built to current building regulations at the date of issue of this certificate would have a building energy performance rating of: 55 D

Recommendations for the cost-effective improvement of energy performance

1. Improve insulation on HWS storage.
2. Add time control to heating system.
3. Add optimum start/stop to the heating system.
4. Consider replacing T8 lamps with retrofit T5 conversion kit.

There are additional improvement measures applicable to this building. Refer to the Recommendations Report.

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Background

This section provides additional information regarding the building and your energy assessment.

Building type:	Residential Institutions: Universities and colleges
Total useful floor area:	1653m^2
Main heating fuel:	NaturalGas
Building Environment:	HeatingandNaturalVentilation
Renewable energy source:	CHP generators
Electricity:	Grid supplied

The Recommendations Report provides additional information in support of your Energy Performance Certificate. It was produced in line with the Government's approved calculation methodology and is based upon output from CLG, iSBEM, v5.2.g, SBEM, v5.2.g.3.

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Recommendations for improvement

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Note that these recommendations do not include advice on matters relating to the operation and maintenance of your building as such cannot be identified or represented within the calculation process.

Implementing improvements - legal disclaimer.

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Recommended measures with a short payback period (less than 3 years)

Recommendations (short payback)	Potential Impact
Improve insulation on HWS storage.	LOW
Add time control to heating system.	LOW
Add optimum start/stop to the heating system.	MEDIUM
Consider replacing T8 lamps with retrofit T5 conversion kit.	MEDIUM
In some spaces, the solar gain limit defined in the NCM is exceeded, which might cause overheating. Consider solar control measures such as the application of reflective coating or shading devices to windows.	MEDIUM
Add local temperature control to the heating system.	MEDIUM
Add weather compensation controls to heating system.	MEDIUM

Recommended measures with a medium payback period (3 to 7 years)

Recommendations (medium payback)	Potential Impact
Introduce HF (high frequency) ballasts for fluorescent tubes: Reduced number of fittings required.	LOW
Add local time control to heating system.	LOW
Consider installing an air source heat pump.	HIGH
Consider installing a ground source heat pump.	HIGH

Recommended measures with a long payback period (more than 7 years)

Recommendations (long payback)	Potential Impact
Consider installing building mounted wind turbine(s).	LOW
Consider installing solar water heating.	LOW
Consider installing PV.	LOW

Other measures

This section lists other measures selected by your assessor based upon an understanding of the building and/or a valid existing Recommendations Report.

Your assessor has not identified other measures for this building.

Payback period:

Payback periods are based upon data provided by Good Practice Guides and Carbon Trust energy survey reports and are average figures calculated using a simple payback method. It is assumed that the source data is correct and accurate, using up to date information.

They should be considered indicative. The figures have been calculated as an average across a range of buildings and may therefore differ from the actual payback period for the building being assessed. It is recommended that the cost effectiveness and payback of each suggested measure be further investigated before making any decision on how to improve the energy efficiency of your building.

Carbon Impact:

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Comparative assessment - Feed-in Tariff

Eligibility for standard tariff for solar PV under the DECC Feed-in Tariff initiative is contingent on a minimum energy efficiency requirement being met. This requires a building to have an EPC band of D or better. Further information can be found at: www.decc.gov.uk/fits This requirement is based upon the means of determining EPC band which is used in England & Wales.

If calculated using this process, but using Scottish climate data, your building would currently have an EPC band of B (and a rating of 33).

Requirements under section 63 of the Climate Change (Scotland) Act

From 1 September 2016, regulations require the assessment and improvement of existing non-domestic buildings with an area of more than 1,000 m². See www.gov.scot/section63 for information.

This building is subject to these regulations as it exceeds 1,000 m² in area. However, buildings with energy performance equivalent to that set by the 2002 building regulations are exempt. This EPC assessment shows that your building meets the 2002 standard and no further action is needed to comply with these regulations.

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Assessor's name: Pete Jeavons
Assessor membership number: EES/017907
Company name/trading name: Ensphere Group Ltd
Address: 10 Greycoat Place, London,SW1P 1SB
Phone number: 020 79606126
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Use of this energy performance information

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Energy Performance Certificate

Non-Domestic buildings and buildings other than dwellings

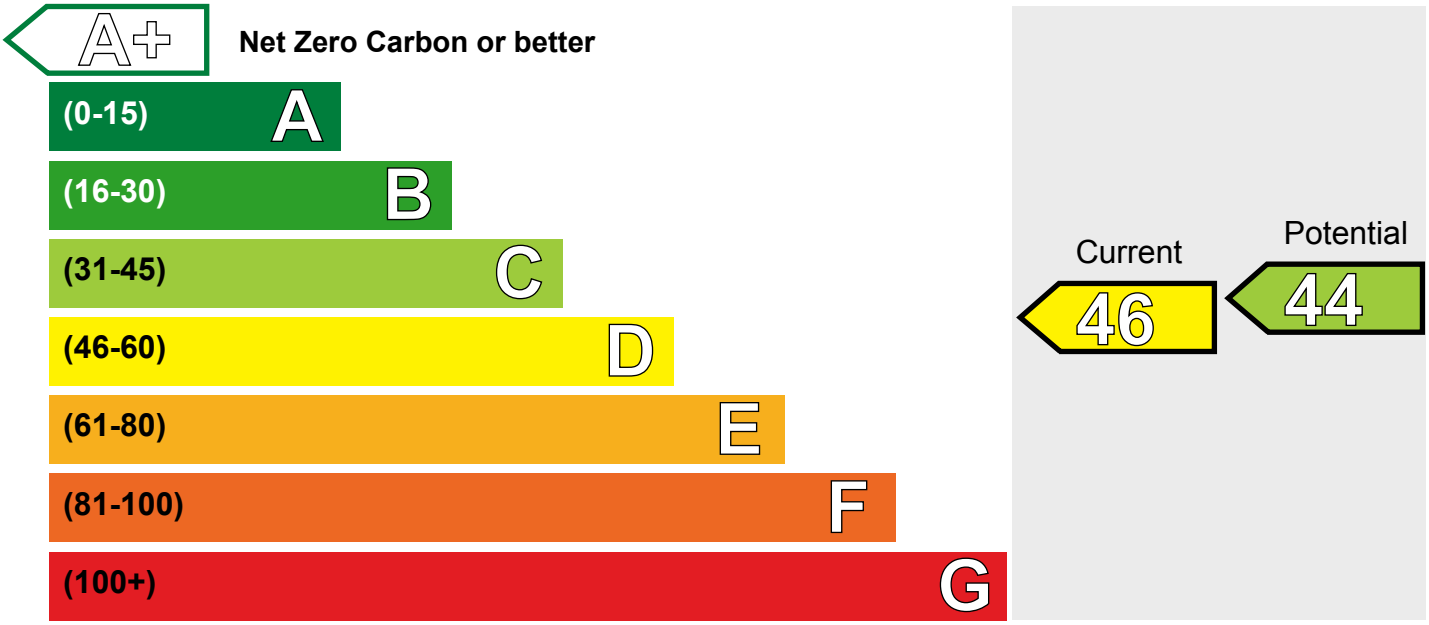
Scotland

1 Dunaskin Court, Glasgow G11 6QJ

Date of assessment:	18 August 2016	**Reference Number:**	9102-3588-5463-0900-8995
Date of certificate:	26 August 2016	**Building type:**	Universities/college
Total conditioned area:	3649m²	**Assessment Software:**	EPCgen, v5.2.g.3
Primary energy indicator:	263 kWh/m²/yr	**Approved Organisation:**	Elmhurst Energy Systems

Building Energy Performance Rating

Excellent



Very Poor

Approximate Energy Use: 176 kWh per m² per year

Approximate Carbon Dioxide Emissions: 45.88 kgCO₂ per m² per year

The building energy performance rating is a measure of the effect of a building on the environment in terms of carbon dioxide (CO_2) emissions. The better the rating, the less impact on the environment. The current rating is based upon an assessor's survey of the building. The potential rating shows the effect of undertaking all of the recommended measures listed below. The Recommendations Report which accompanies this certificate explains how this rating is calculated and gives further information on the performance of this building and how to improve it.

Benchmark

A building of this type built to current building regulations at the date of issue of this certificate would have a building energy performance rating of: 54 D

Recommendations for the cost-effective improvement of energy performance

1. Improve insulation on HWS storage.
2. Add time control to HWS secondary circulation.
3. Add time control to heating system.
4. Add optimum start/stop to the heating system.
5. Consider replacing T8 lamps with retrofit T5 conversion kit.

There are additional improvement measures applicable to this building. Refer to the Recommendations Report.

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Background

This section provides additional information regarding the building and your energy assessment.

Building type:	Residential Institutions: Universities and colleges
Total useful floor area:	3649m^2
Main heating fuel:	NaturalGas
Building Environment:	HeatingandNaturalVentilation
Renewable energy source:	CHP generators
Electricity:	Grid supplied

The Recommendations Report provides additional information in support of your Energy Performance Certificate. It was produced in line with the Government's approved calculation methodology and is based upon output from CLG, iSBEM, v5.2.g, SBEM, v5.2.g.3.

This calculates energy used in the heating, hot water provision, lighting and ventilation of your building. Different fuels produce different amounts of carbon dioxide for every kilowatt hour (kWh) of energy used. The calculation methodology therefore applies fuel emission factors to energy use for each fuel used to give an overall rating for your building. This assessment covers all fixed building services but excludes energy used in portable appliances, office equipment and for industrial processes.

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Implementing improvements - legal disclaimer.

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Recommended measures with a short payback period (less than 3 years)

Recommendations (short payback)	Potential Impact
Improve insulation on HWS storage.	LOW
Add time control to HWS secondary circulation.	LOW
Add time control to heating system.	LOW
Add optimum start/stop to the heating system.	MEDIUM
Consider replacing T8 lamps with retrofit T5 conversion kit.	MEDIUM
In some spaces, the solar gain limit defined in the NCM is exceeded, which might cause overheating. Consider solar control measures such as the application of reflective coating or shading devices to windows.	MEDIUM
Add local temperature control to the heating system.	MEDIUM
Add weather compensation controls to heating system.	MEDIUM
Introduce HF (high frequency) ballasts for fluorescent tubes: Reduced number of fittings required.	LOW

Recommended measures with a medium payback period (3 to 7 years)

Recommendations (medium payback)	Potential Impact
Add local time control to heating system.	MEDIUM
Consider installing an air source heat pump.	HIGH
Consider installing a ground source heat pump.	HIGH

Recommended measures with a long payback period (more than 7 years)

Recommendations (long payback)	Potential Impact
Consider installing building mounted wind turbine(s).	LOW
Consider installing solar water heating.	LOW
Consider installing PV.	LOW

Other measures

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Your assessor has not identified other measures for this building.

Payback period:

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Comparative assessment - Feed-in Tariff

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Assessor's name: Pete Jeavons
Assessor membership number: EES/017907
Company name/trading name: Ensphere Group Ltd
Address: 10 Greycoat Place, London,SW1P 1SB
Phone number: 020 79606126
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Energy Performance Certificate

Non-Domestic buildings and buildings other than dwellings

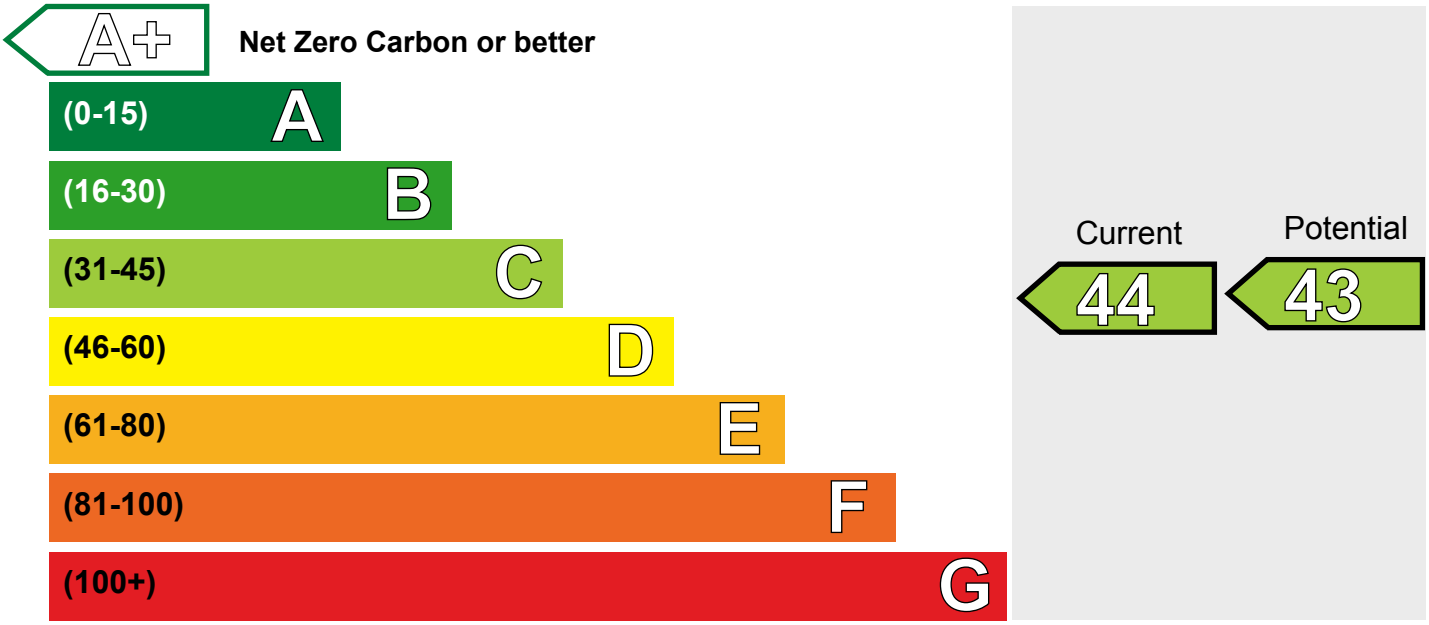
Scotland

5 Dunaskin Court, Glasgow G11 6QJ

Date of assessment:	18 August 2016	**Reference Number:**	9102-3888-5463-0900-8991
Date of certificate:	25 August 2016	**Building type:**	Universities/college
Total conditioned area:	6244.4m^2	**Assessment Software:**	EPCgen, v5.2.g.3
Primary energy indicator:	254 kWh/m^2/yr	**Approved Organisation:**	Elmhurst Energy Systems

Building Energy Performance Rating

Excellent



Very Poor

Approximate Energy Use: 167 kWh per m^2 per year

Approximate Carbon Dioxide Emissions: 44.22 kgCO_2 per m^2 per year

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Recommendations for the cost-effective improvement of energy performance

1. Improve insulation on HWS storage.
2. Add time control to heating system.
3. Add optimum start/stop to the heating system.
4. Consider replacing T8 lamps with retrofit T5 conversion kit.

There are additional improvement measures applicable to this building. Refer to the Recommendations Report.

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Background

This section provides additional information regarding the building and your energy assessment.

Building type:	Residential Institutions: Universities and colleges
Total useful floor area:	6244m^2
Main heating fuel:	NaturalGas
Building Environment:	HeatingandNaturalVentilation
Renewable energy source:	CHP generators
Electricity:	Grid supplied

The Recommendations Report provides additional information in support of your Energy Performance Certificate. It was produced in line with the Government's approved calculation methodology and is based upon output from CLG, iSBEM, v5.2.g, SBEM, v5.2.g.3.

This calculates energy used in the heating, hot water provision, lighting and ventilation of your building. Different fuels produce different amounts of carbon dioxide for every kilowatt hour (kWh) of energy used. The calculation methodology therefore applies fuel emission factors to energy use for each fuel used to give an overall rating for your building. This assessment covers all fixed building services but excludes energy used in portable appliances, office equipment and for industrial processes.

As buildings can be used in different ways, energy use is calculated using standard occupancy assumptions which may be different from the way you use your building. The rating also uses national weather information to allow comparison between the performance of similar buildings in different parts of Scotland.

Further information on the assessment process and approved software tools can be found online at: www.scotland.gov.uk/epc.

Recommendations for improvement

This section lists the improvement measures recommended on your Energy Performance Certificate and further action you can take to improve the performance of your building. These measures have been checked by your assessor as being appropriate for your building and are listed under four headings: short payback period, medium payback period, long payback period and other improvement measures.

The calculation tool has automatically produced a set of recommendations which are reviewed by your assessor to ensure that they are relevant to the building and its use. The assessor may add or remove recommendations and may also have commented on the recommendations based upon their professional knowledge and expertise. This may include inserting additional recommendations or measures under ‘other recommendations’ (see below).

Note that these recommendations do not include advice on matters relating to the operation and maintenance of your building as such cannot be identified or represented within the calculation process.

Implementing improvements - legal disclaimer.

The advice provided in this Recommendations Report is intended to be for information only. Recipients of this report are advised to seek further professional advice before making any decision on how to improve the energy performance of the building.

Recommended measures with a short payback period (less than 3 years)

Recommendations (short payback)	Potential Impact
Improve insulation on HWS storage.	LOW
Add time control to heating system.	MEDIUM
Add optimum start/stop to the heating system.	MEDIUM
Consider replacing T8 lamps with retrofit T5 conversion kit.	MEDIUM
In some spaces, the solar gain limit defined in the NCM is exceeded, which might cause overheating. Consider solar control measures such as the application of reflective coating or shading devices to windows.	MEDIUM
Add local temperature control to the heating system.	MEDIUM
Add weather compensation controls to heating system.	MEDIUM
Introduce HF (high frequency) ballasts for fluorescent tubes: Reduced number of fittings required.	LOW
Add local time control to heating system.	MEDIUM

Recommended measures with a medium payback period (3 to 7 years)

Recommendations (medium payback)	Potential Impact
Consider installing an air source heat pump.	HIGH
Consider installing a ground source heat pump.	HIGH

Recommended measures with a long payback period (more than 7 years)

Recommendations (long payback)	Potential Impact
Consider installing building mounted wind turbine(s).	LOW
Consider installing solar water heating.	LOW
Consider installing PV.	LOW

Other measures

This section lists other measures selected by your assessor based upon an understanding of the building and/or a valid existing Recommendations Report.

Your assessor has not identified other measures for this building.

Payback period:

Payback periods are based upon data provided by Good Practice Guides and Carbon Trust energy survey reports and are average figures calculated using a simple payback method. It is assumed that the source data is correct and accurate, using up to date information.

They should be considered indicative. The figures have been calculated as an average across a range of buildings and may therefore differ from the actual payback period for the building being assessed. It is recommended that the cost effectiveness and payback of each suggested measure be further investigated before making any decision on how to improve the energy efficiency of your building.

Carbon Impact:

Each measure is assigned a low, medium or high potential impact on the energy efficiency of your building. This relates to their potential to reduce carbon dioxide emissions arising from energy used in your building. For automatically generated recommendations, the carbon impact is determined by the approved software but may be adjusted by your assessor based upon their knowledge of the building. The impact of 'other recommendations' is determined by the assessor.

Comparative assessment - Feed-in Tariff

Eligibility for standard tariff for solar PV under the DECC Feed-in Tariff initiative is contingent on a minimum energy efficiency requirement being met. This requires a building to have an EPC band of D or better. Further information can be found at: www.decc.gov.uk/fits This requirement is based upon the means of determining EPC band which is used in England & Wales.

If calculated using this process, but using Scottish climate data, your building would currently have an EPC band of B (and a rating of 33).

Requirements under section 63 of the Climate Change (Scotland) Act

From 1 September 2016, regulations require the assessment and improvement of existing non-domestic buildings with an area of more than 1,000 m². See www.gov.scot/section63 for information.

This building is subject to these regulations as it exceeds 1,000 m² in area. However, buildings with energy performance equivalent to that set by the 2002 building regulations are exempt. This EPC assessment shows that your building meets the 2002 standard and no further action is needed to comply with these regulations.

About this document

This report and the accompanying Energy Performance Certificate are valid for a maximum of ten years. These documents cease to be valid where superseded by a more recent assessment of the same building carried out by a member of an Approved Organisation.

Your Energy Performance Certificate and this Recommendations Report for this building were produced following an energy assessment undertaken by an assessor accredited by Elmhurst Energy Systems (www.enspheregroup.com), an Approved Organisation Appointed by Scottish Ministers. The certificate has been produced under the Energy Performance of Buildings (Scotland) Regulations 2008 from data lodged to the Scottish EPC register. You can verify the validity of this document by visiting www.scottishepcregister.org.uk and entering the report reference number (RRN) printed at the top of this page.

Assessor's name: Pete Jeavons
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If you have any concerns regarding the content of this report or the service provided by your assessor you should in the first instance raise these matters with your assessor and with the Approved Organisation to which they belong. All Approved Organisations are required to publish their complaints and disciplinary procedures and details can be found online at the web address given above.

Use of this energy performance information

Once lodged by your EPC assessor, this Energy Performance Certificate and Recommendations Report are available to view online at www.scottishepcregister.org.uk, with the facility to search for any single record by entering the property address. This gives everyone access to any current, valid EPC except where a property has a Green Deal Plan, in which case the report reference number (RRN) must first be provided. The energy performance data in these documents, together with other building information gathered during the assessment is held on the Scottish EPC Register and is available to authorised recipients, including organisations delivering energy efficiency and carbon reduction initiatives on behalf of the Scottish and UK governments. A range of data from all assessments undertaken in Scotland is also published periodically by the Scottish Government. Further information on these matters and on Energy Performance Certificates in general, can be found at www.gov.scot/epc.

Energy Performance Certificate

Non-Domestic buildings and buildings other than dwellings

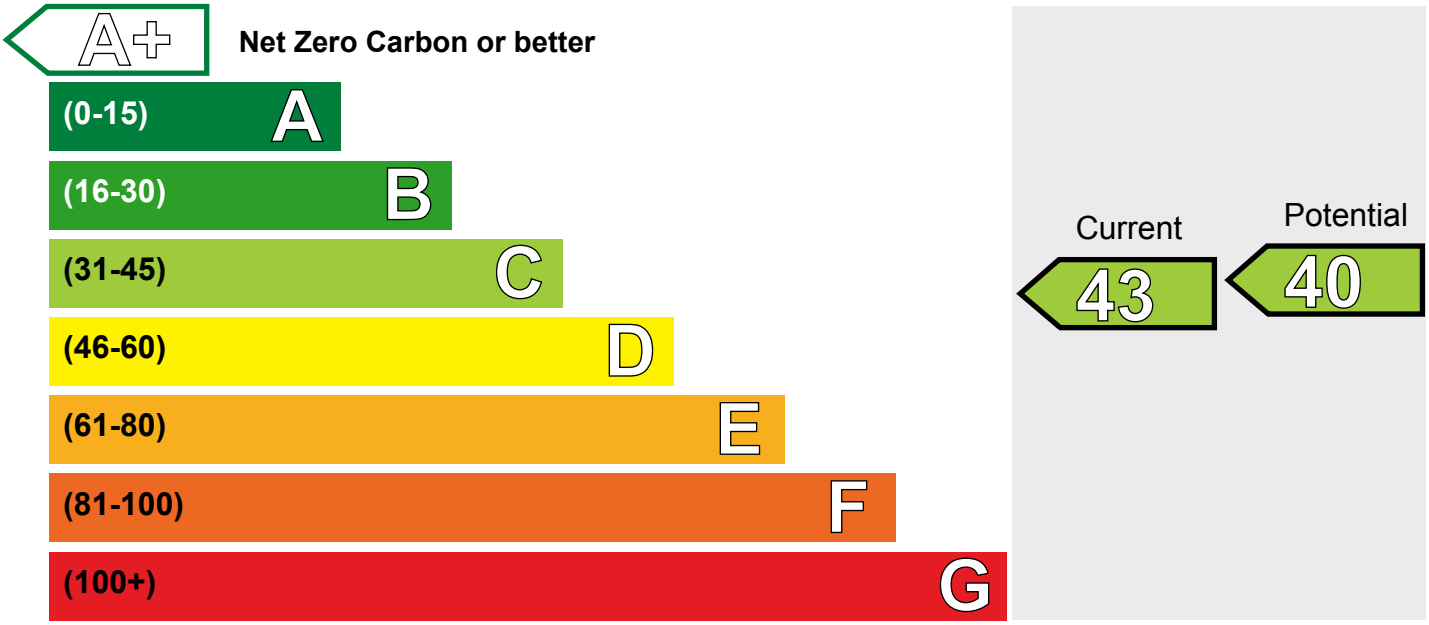
Scotland

4 Dunaskin Court, Glasgow G11 6QJ

Date of assessment:	19 August 2016	**Reference Number:**	9110-5936-0439-2898-9002
Date of certificate:	26 August 2016	**Building type:**	Universities/college
Total conditioned area:	2002.45m^2	**Assessment Software:**	EPCgen, v5.2.g.3
Primary energy indicator:	246 kWh/m^2/yr	**Approved Organisation:**	Elmhurst Energy Systems

Building Energy Performance Rating

Excellent



Very Poor

Approximate Energy Use: 161 kWh per m^2 per year

Approximate Carbon Dioxide Emissions: 42.85 kgCO_2 per m^2 per year

The building energy performance rating is a measure of the effect of a building on the environment in terms of carbon dioxide (CO_2) emissions. The better the rating, the less impact on the environment. The current rating is based upon an assessor's survey of the building. The potential rating shows the effect of undertaking all of the recommended measures listed below. The Recommendations Report which accompanies this certificate explains how this rating is calculated and gives further information on the performance of this building and how to improve it.

Benchmark

A building of this type built to current building regulations at the date of issue of this certificate would have a building energy performance rating of: 51 D

Recommendations for the cost-effective improvement of energy performance

1. Improve insulation on HWS storage.
2. Add time control to heating system.
3. Add optimum start/stop to the heating system.
4. Consider replacing T8 lamps with retrofit T5 conversion kit.

There are additional improvement measures applicable to this building. Refer to the Recommendations Report.

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Recommendations Report

Background

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Total useful floor area:	2003m^2
Main heating fuel:	NaturalGas
Building Environment:	HeatingandNaturalVentilation
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Recommendations (short payback)	Potential Impact
Improve insulation on HWS storage.	LOW
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Consider replacing T8 lamps with retrofit T5 conversion kit.	MEDIUM
In some spaces, the solar gain limit defined in the NCM is exceeded, which might cause overheating. Consider solar control measures such as the application of reflective coating or shading devices to windows.	MEDIUM
Add local temperature control to the heating system.	MEDIUM
Add weather compensation controls to heating system.	MEDIUM

Recommended measures with a medium payback period (3 to 7 years)

Recommendations (medium payback)	Potential Impact
Introduce HF (high frequency) ballasts for fluorescent tubes: Reduced number of fittings required.	LOW
Add local time control to heating system.	MEDIUM
Consider installing an air source heat pump.	HIGH
Consider installing a ground source heat pump.	HIGH

Recommended measures with a long payback period (more than 7 years)

Recommendations (long payback)	Potential Impact
Consider installing building mounted wind turbine(s).	LOW
Consider installing solar water heating.	LOW
Consider installing PV.	LOW

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