

Solution Overview

Input data:

Bank

Year of Construction Before 1965
 Total Area 200 m²
 No of levels 3 levels
 Windows Improved
 Selection criteria Lowest CO₂

Inlet T 50 °C
 Delta T 10 °C
 Walls Standard
 Roof Improved
 Ventilation Improved
 Does not accept compromise for CO₂ Emissions

Heat demand 42 kW
 Design ext. temp -3 °C



Office Building

S England

Comparison between selected Hybrid and Boiler only systems

Hybrid System Yearly CO₂

Lowest possible CO ₂ emissions	3.6 T
Actual CO ₂ emissions	3.6 T
Increase in CO ₂ emissions	0.0 T

Boiler Only Yearly CO₂

Boiler CO ₂	10.8 T
CO ₂ savings	7.2 T
Trees equiv.	344

Hybrid System Yearly Running Costs

Heat Pump running costs	£ 6,492
Boiler running costs	£ 10
Total running costs	£ 6,501

Boiler Only Yearly Running Costs

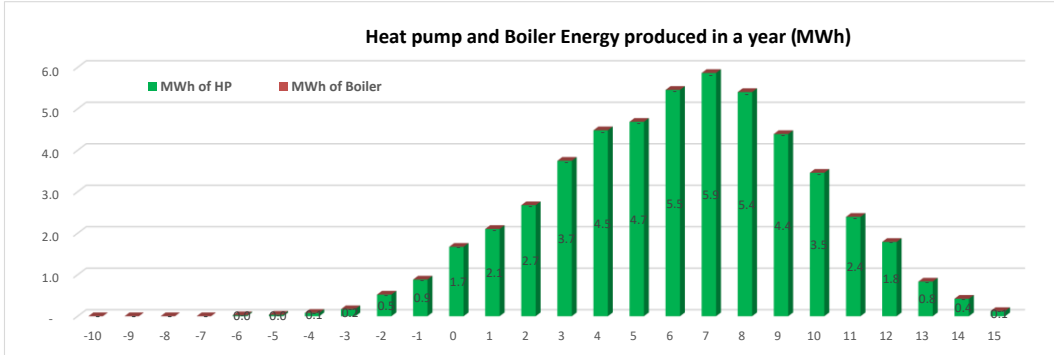
Boiler only costs	£ 8,438
Difference	£ 1,936



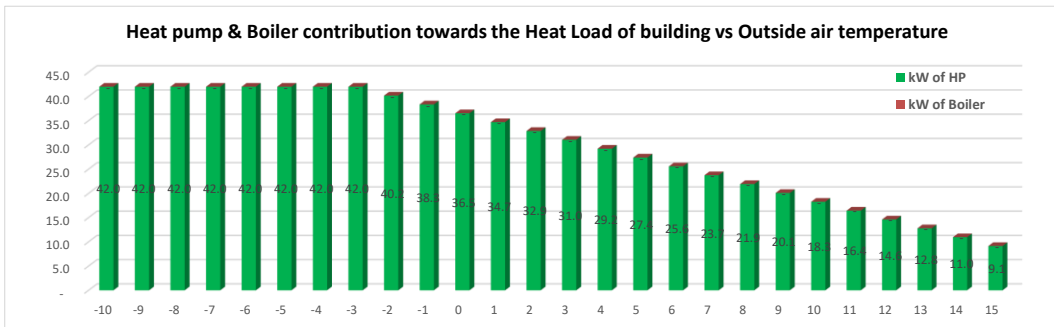
Heat Pump
Aerotop L 54



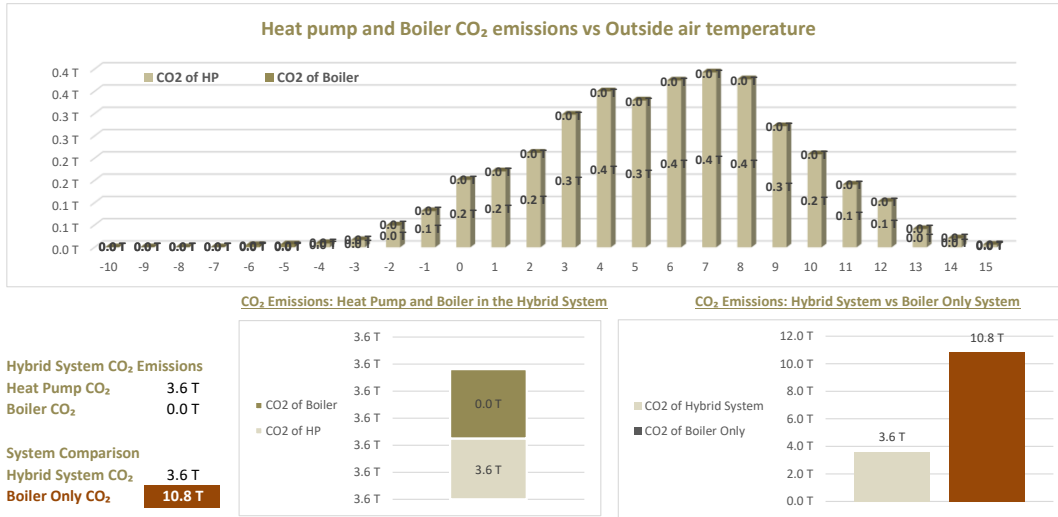
Boiler
No Boiler Required



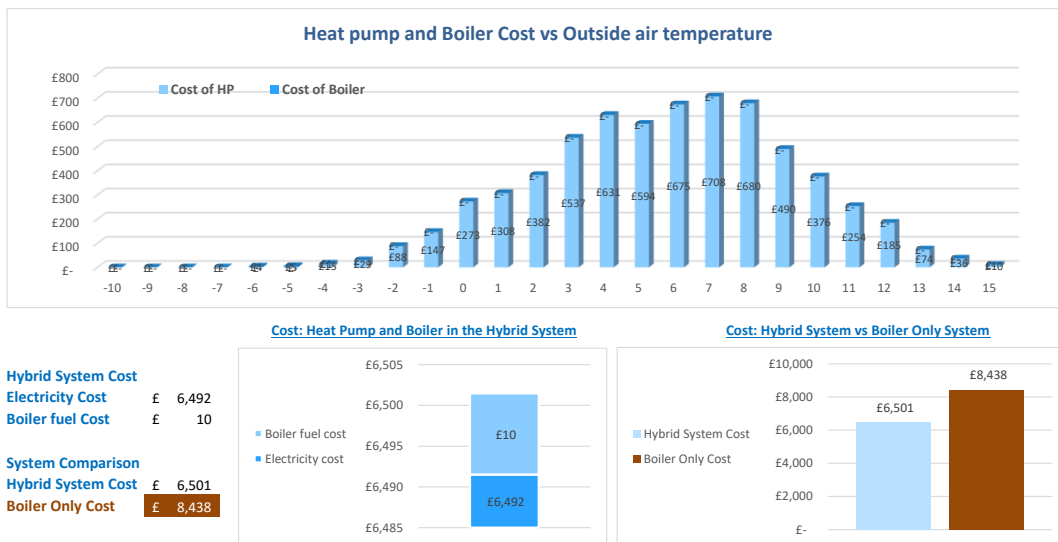
HP Name	Lowest Yearly CO ₂ Heat Pump Comparison								Lowest Yearly Cost Heat Pump Comparison							
	Heat produced MWh	% of Heat Demand	HP Start Temp. °C	Max Load HP	HP CO ₂	Boiler CO ₂	Total CO ₂	Total Running costs	Heat produced MWh	% of Heat Demand	HP Start Temp. °C	Max Load HP	HP Running costs	Boiler Running costs	Total CO ₂	Total Running costs
Aerotop M 24	44.55	86.96%	-4.0	100%	2.8 T	1.2 T	4.1 T	£ 6,033	42.87	83.7%	1.0	100%	£ 4,783	£ 1,212	4.2 T	£ 5,996
Aerotop M 27	46.58	90.92%	-4.0	100%	2.8 T	0.9 T	3.6 T	£ 5,669	44.70	87.3%	1.0	100%	£ 4,685	£ 947	3.8 T	£ 5,632
Aerotop M 32	48.71	95.09%	-4.0	100%	3.1 T	0.5 T	3.6 T	£ 5,986	44.91	87.7%	2.0	100%	£ 5,018	£ 916	4.0 T	£ 5,934
Aerotop M 48	51.05	99.66%	-4.0	100%	3.3 T	0.0 T	3.3 T	£ 5,947	47.84	93.4%	1.0	90%	£ 5,383	£ 492	3.6 T	£ 5,875
Aerotop L 54	51.16	99.86%	-4.0	100%	3.6 T	0.0 T	3.6 T	£ 6,501	45.73	89.3%	2.0	70%	£ 5,632	£ 797	4.1 T	£ 6,430
Aerotop L 61	51.17	99.88%	-4.0	100%	3.5 T	0.0 T	3.6 T	£ 6,405	45.73	89.3%	2.0	50%	£ 5,539	£ 797	4.1 T	£ 6,336
Aerotop L 65	51.17	99.88%	-4.0	70%	3.4 T	0.0 T	3.4 T	£ 6,179	45.73	89.3%	2.0	50%	£ 5,293	£ 797	4.0 T	£ 6,091
Aerotop L 79	51.17	99.88%	-4.0	60%	3.3 T	0.0 T	3.3 T	£ 5,927	47.84	93.4%	1.0	40%	£ 5,358	£ 492	3.6 T	£ 5,851
Aerotop L 88	51.17	99.88%	-4.0	60%	3.3 T	0.0 T	3.3 T	£ 5,952	45.73	89.3%	2.0	40%	£ 5,063	£ 797	3.8 T	£ 5,860



Detailed Yearly CO₂ Analysis



Detailed Yearly Cost Analysis



Summary

Yearly building heat requirement	51,229 kWh	Yearly fuel consumption	71 kWh	Yearly electricity consumption	15,456 kWh
Yearly heat produced by Boiler	71 kWh	Price of fuel	£ 0.140	Price of electricity	£ 0.4200
Yearly heat produced by Heat Pump	51,157 kWh	Yearly fuel cost	£ 10	Yearly electricity cost	£ 6,492
Yearly hybrid system efficiency	329.9%	ELCO boiler efficiency	99.90%	Seasonal Performance Factor	330.99%

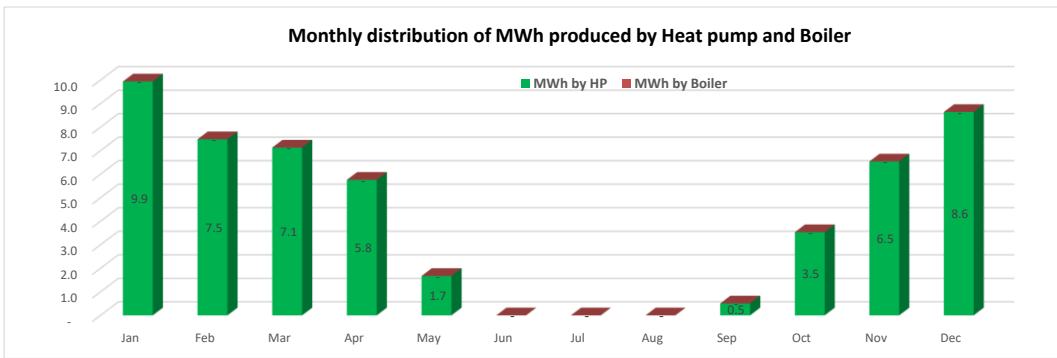
Existing boiler efficiency	85.00%	Existing boiler fuel	Natural Gas
----------------------------	--------	----------------------	-------------

In the selected hybrid system the **Heat Pump** produces **99.9%** and the **Boiler** produces **0.1%** of the **Yearly Heat Demand**.

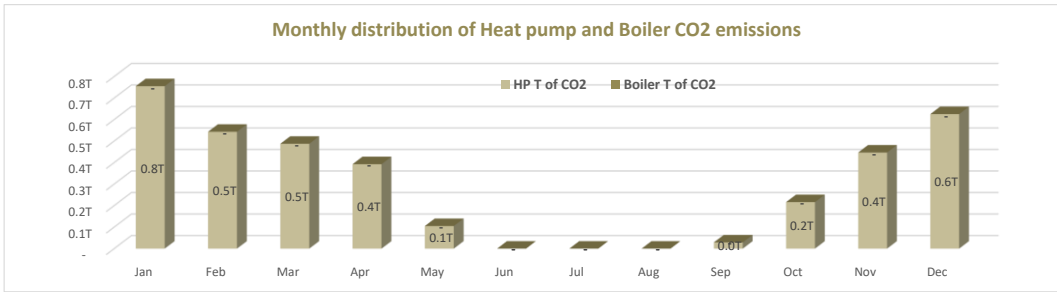
Links for Supporting Documents

- Link to Heat Pump Technical submittal [Aerotop L 54](#)
- Link to Boiler Technical submittal [No Boiler Required](#)

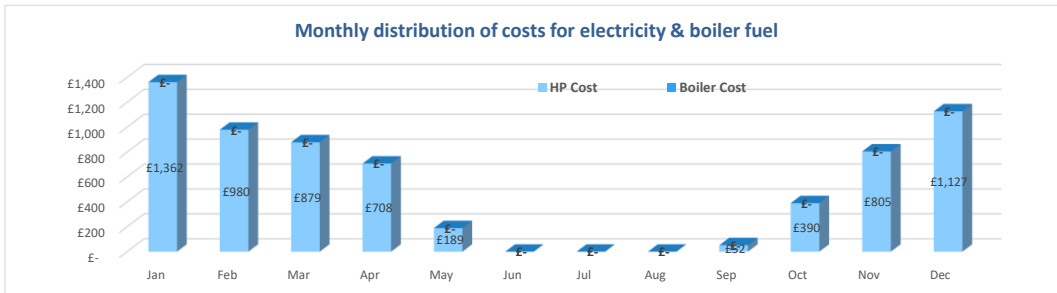
Monthly Energy Generation Analysis



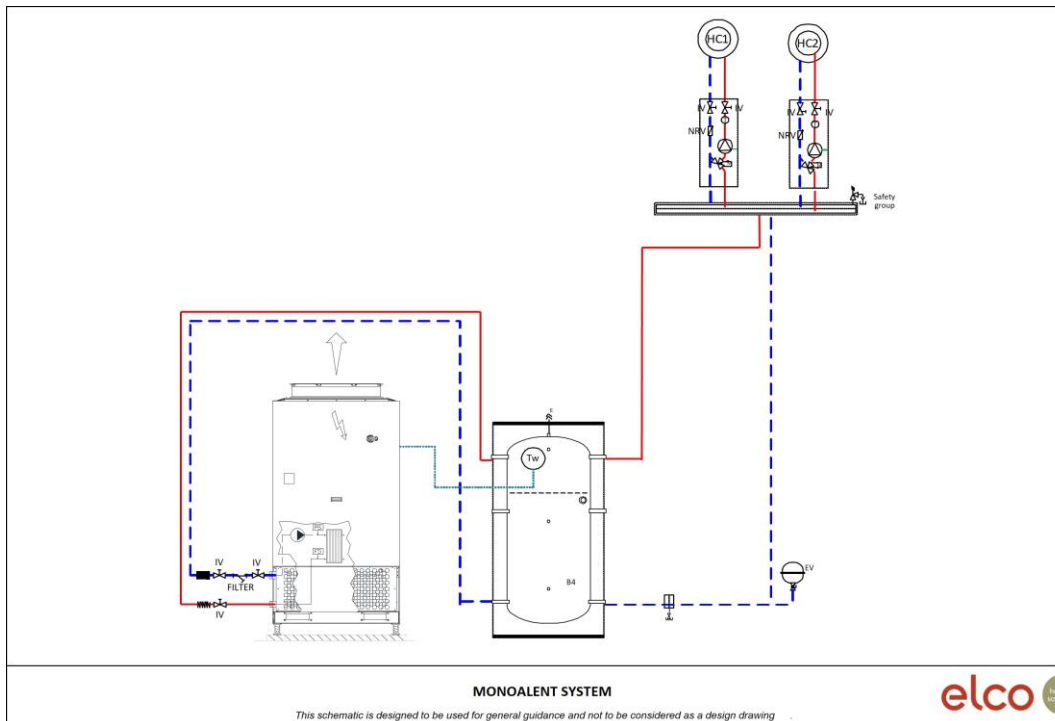
Monthly CO₂ Analysis



Monthly Cost Analysis



Sample schematic for: One Heat Pump and No Boiler



For more details and a quotation of the above system please contact ELCO Heating Solutions on enquiries@elco.co.uk
 Thank you very much for your interest in the ELCO products.

Solution Date & Time: 15 December 2022 at 09:35
 Solution generated by: Andreea Manoiu
 Company: ELCO Heating Solutions
 Email: amanoiu@elco.co.uk
 Phone: +44 777 0607 319



PLEASE READ THESE TERMS AND CONDITIONS CAREFULLY BEFORE USING THE HYBRID SYSTEM SELECTOR TOOL

1. Who we are and how to contact us

1.1. www.elco.co.uk is a website operated by ELCO Heating Solutions Limited ("Us" or "We"). We are a limited company registered in England and Wales under company number 06414126 and have our registered office at Third Floor, 20 Old Bailey, London, EC4M 7AN. our VAT number is 917 7110 31.

1.2. To contact Us, please email enquiries@elco.co.uk.

2. Application of these Terms

2.1. By using the Hybrid System Selector Tool (the "**Selector Tool**"), You confirm that You accept these terms and conditions (**Terms**) and that You agree to comply with them. If You do not agree to these Terms, You must not use the Selector Tool.

2.2. You are also responsible for ensuring that all persons who access or use the Selector Tool software via Your USB copy and/or through Your app or internet connection are aware of these Terms and any other applicable terms and conditions, and that they comply with them.

2.3. These Terms refer to the following additional terms, which also apply to Your use of the Selector Tool:

2.3.1. Our Website Terms of Use available at www.elco.co.uk/terms/

2.3.2. Our Privacy Policy (which includes our Cookies Policy) available at www.elco.co.uk/privacy-policy/.

3. Changes to these Terms

3.1. We may update and change the Selector Tool from time to time to reflect changes to Our products, laws and regulations relating to Our industry and Our business priorities.

3.2. We amend these Terms from time to time. Every time You wish to use the Selector Tool, please check these Terms to ensure You understand the terms that apply at that time.

4. The Selector Tool

4.1. The Selector Tool is a digital service enabling You to access information regarding heating solutions for Your building project (Your **Project**). We will ask that You provide Us with details of Your Project when You use the Selector Tool. The Selector Tool provides information regarding anticipated running costs of certain heating solutions for Your Project, based upon publicly available data.

4.2. From time to time the Selector Tool may be provided:

4.2.1. as software pre-loaded onto a USB stick provided by Us (**USB**) to run on Your own computer device;

4.2.2. online via a dedicated page within Our website, accessed by log-in username and password; or

4.2.3. via an app that may be downloaded to Your device, accessed by log-in username and password.

4.3. The Selector Tool is made available free of charge.

4.4. The Selector Tool and its content are only targeted to, and intended for use by, individuals located in the UK. By continuing to access, view or make use of the Selector Tool and any related content and services, You hereby warrant and represent to Us that You are located in the UK. We shall not supply a USB to any postal address outside the UK. We do not represent that content available on or through the Selector Tool is appropriate for use or available in other locations.

4.5. We do not guarantee that the Selector Tool will always be available or be uninterrupted. We may suspend or withdraw or restrict the availability of all or any part of the Selector Tool for business and operational reasons.

5. DISCLAIMERS

5.1. **The Selector Tool is an information tool only and not a design tool.**

5.2. **By using the Selector Tool, You represent that You are not using the Selector Tool to design any aspect of Your Project. You must obtain professional or specialist advice before taking, or refraining from, any action in relation to Your Project on the basis of the information from the Selector Tool.**

5.3. **We give no warranty that any heating or insulation solutions referred to by the Selector Tool (including any report that the Selector Tool generates) will be suitable for Your Project and We accept no responsibility for any loss incurred by You as a result of taking, or refraining from, any action in relation to Your Project on the basis of the information from the Selector Tool.**

5.4. Although We make reasonable efforts (a) to ensure that any information contained in a USB is updated prior to release and (b) to update the information on the online and/or app versions of the Selector Tool, We make no representations, warranties or guarantees, whether express or implied, that the content on the Selector Tool is accurate, complete or up to date. We have no obligation to update the information contained on any USB issued to You.

5.5. In the event that We provide any links to other sites and resources provided by third parties, these links are provided for Your information only. Such links should not be interpreted as approval by Us of those linked websites or information You may obtain from them. We have no control over the contents of those sites or resources.

6. USB Selector Tool licence

6.1. The Supplier hereby grants to You a non-transferable, non-exclusive licence, with no right to sub-licence, to use the Selector Tool software contained in the USB, on a computer device that You own or control for the period set out in clause 6.2.

6.2. This licence remains effective until the earlier of:

6.2.1. the end of the full period of the copyright in the Software commencing on the date of receipt of the USB; or

6.2.2. termination by You or Us.

6.3. We shall have the right to terminate this licence automatically if You fail to comply with any of these Terms.

6.4. Upon termination of the licence:

6.4.1. all rights granted to You under these Terms shall cease;

6.4.2. You shall cease all activities authorised by these Terms;

6.4.3. You shall immediately destroy or return to Us the USB and all copies of the Selector Tool then in Your possession, custody or control and, in the case of destruction, certify to Us that You have done so.

7. USB and Account details

7.1. If:

7.1.1. You are provided with a USB containing the Selector Tool software; or

7.1.2. You choose any username, password or any other piece of information as part of Our security procedures

You must treat such USB and any such information as confidential and must not provide or disclose it to any third party.

7.2. We have the right to disable any user name or password, whether chosen by You or allocated by us, at any time, if in Our reasonable opinion You have failed to comply with any of the provisions of these terms of use.

7.3. If You know or suspect that anyone other than You knows Your username or password, You must promptly notify Us at enquiries@elco.co.uk.

8. Intellectual Property and Permitted use of the Selector Tool

8.1. We are the owner or the licensee of all intellectual property rights in the Selector Tool and any reports generated by it and We reserve all Our rights in respect of the same.

8.2. "ELCO", "ELCO Heating Solutions", "AEROTOP", "AQUATOP", "THISION", "TRIGON" and "Hybrid System Selector Tool" are trade marks of ELCO Heating Solutions Limited. You are not permitted to use them without Our approval.

8.3. You may not use the Selector Tool other than as specified in these Terms without Our prior written consent.

8.4. You may not use any information provided by Us or obtained by You during use of the Selector Tool to create any software whose expression is substantially similar to that of the Selector Tool nor use such information in any manner which would be restricted by any copyright subsisting in it.

8.5. You have no right (and shall not permit any third party) to copy, adapt, reverse engineer, decompile, disassemble, modify, adapt or make error corrections to the Selector Tool in whole or in part.

8.6. You must not modify any paper or digital copies of any reports generated by the Selector Tool and You must not use any illustrations, photographs, video or audio sequences or any graphics separately from any accompanying text. Our status (and that of any identified third party sources) as the authors of content generated by the Selector Tool must always be acknowledged.

9. Limitation of Liability

9.1. We do not exclude or limit in any way Our liability to You where it would be unlawful to do so. This includes liability for death or personal injury caused by Our negligence or the negligence of Our employees, agents or subcontractors and for fraud or fraudulent misrepresentation.

9.2. We exclude all implied conditions, warranties, representations or other terms that may apply to the Selector Tool or any content on it.

9.3. We will not be liable to You for any loss or damage, whether in contract, tort (including negligence), breach of statutory duty, or otherwise, even if foreseeable, arising under or in connection with:

9.3.1. use of, or inability to use, the Selector Tool; or

9.3.2. use of or reliance on any information provided by the Selector Tool.

9.4. In particular, We will not be liable for: (a) loss of profits, sales, business, or revenue; (b) business interruption; (c) loss of anticipated savings; (d) loss of business opportunity, goodwill or reputation; or (e) any indirect or consequential loss or damage.

10. Use of personal information

10.1. We will only use Your personal information as set out in Our privacy policy available at: www.elco.co.uk/privacy-policy/

11. Information input into the Selector Tool

11.1. Any information You input into the Selector Tool will be considered non-confidential and non-proprietary. You retain all ownership rights in Your information, but You are required to grant Us a limited licence to use, store and copy that content.

12. Viruses

12.1. We provide no guarantee that the Selector Tool will be secure or free from bugs or viruses. You are responsible for configuring Your information technology, computer programmes and platform to access the Selector Tool. You should use Your own virus protection software.

12.2. You must not misuse the Selector Tool by knowingly introducing viruses, trojans, worms, logic bombs or other material that is malicious or technologically harmful. You must not attempt to gain unauthorised access to the Selector Tool, the server on which the Selector Tool is stored or any server, computer or database connected to the Selector Tool. You must not attack the Selector Tool via a denial-of-service attack or a distributed denial-of service attack. By breaching this provision, You would commit a criminal offence under the Computer Misuse Act 1990. We will report any such breach to the relevant law enforcement authorities and We will co-operate with those authorities by disclosing Your identity to them. In the event of such a breach, Your right to use the Selector Tool will cease immediately.

13. No Linking

13.1. You may establish any link to the Selector Tool from any other website.

14. Assignment

14.1. We may transfer Our rights and obligations under these terms to another organisation. We will notify You in writing if this happens and We will ensure that the transfer will not affect Your rights under the contract.

15. Governing Law and Jurisdiction

15.1. These terms of use, their subject matter and their formation (and any non-contractual disputes or claims) are governed by English law. We both agree to the exclusive jurisdiction of the courts of England and Wales.