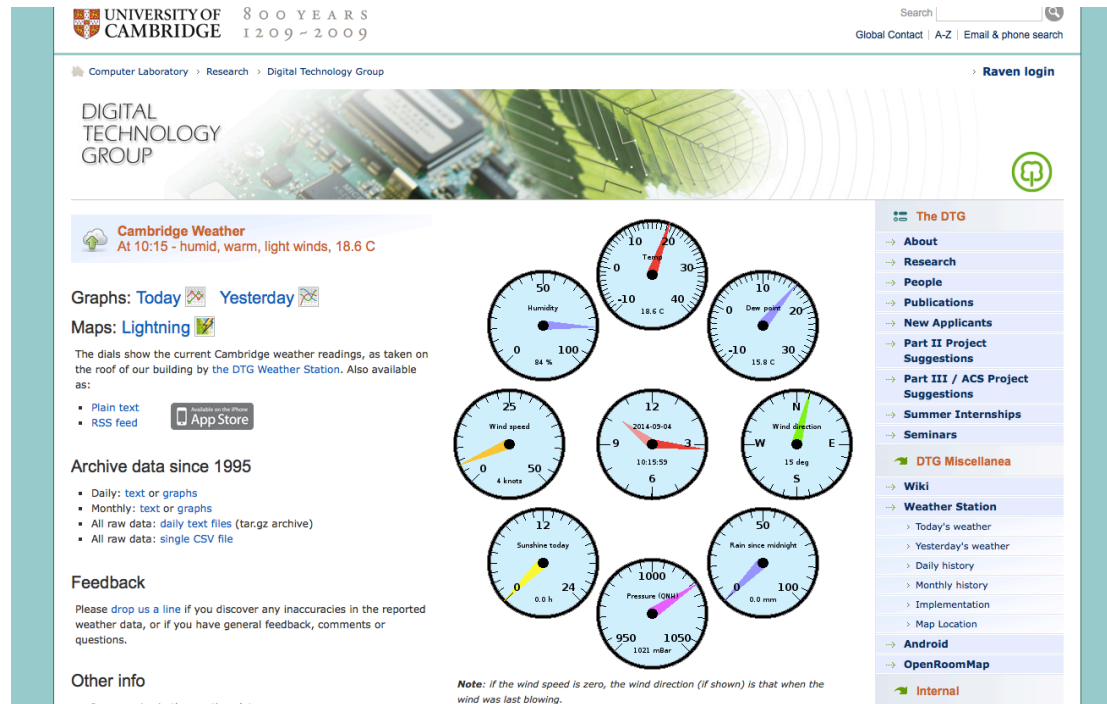


External Climate Data

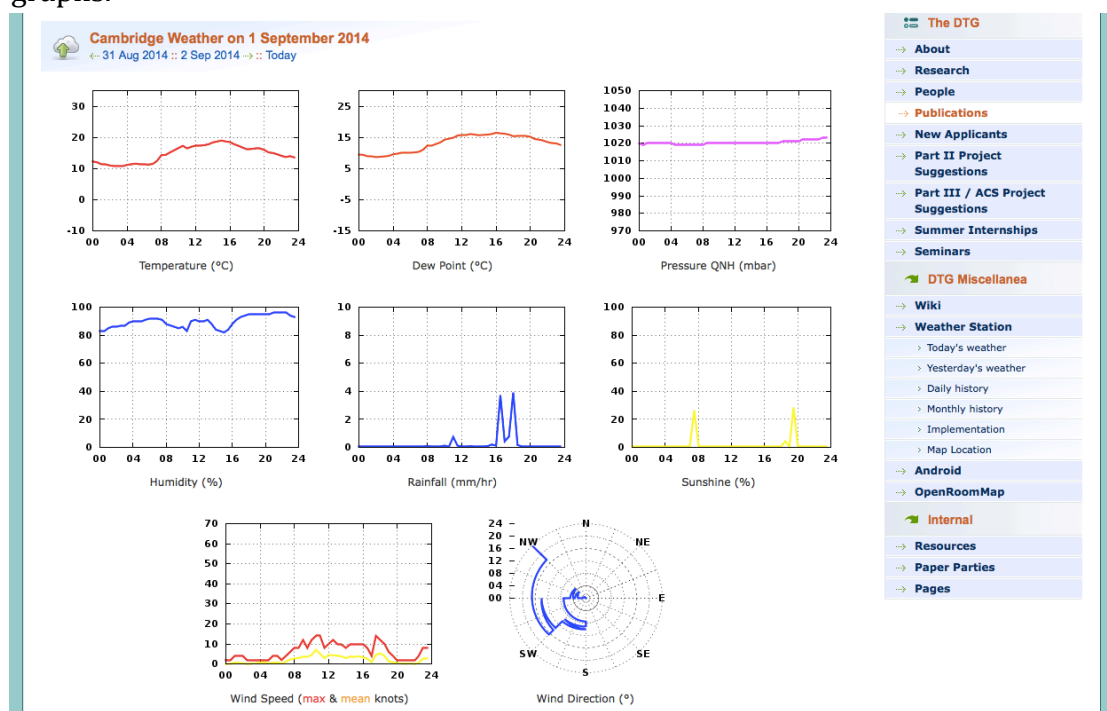
Hourly weather data from station Cambridge Computer Laboratory Rooftop is continuously collected and stored into a local database. The data is available via Digital Technology Group weather station:

<https://www.cl.cam.ac.uk/research/dtg/weather/>.



The station has information for temperature, humidity, dew point temperature, wind speed/direction, atmospheric pressure, sunshine hours and precipitation type.

Daily weather data from 1995 can be viewed and downloaded in text or in graphs.



```

# DTG Weather on Monday 01 September 2014.
#
# Data are immediate at "Time" except wind speed (average since previous "Time")
# and wind direction (most frequent since previous "Time".) Sun and rain values
# are cumulative from "Start". MxWSpd gives max wind speed since previous "Time".
#
#Time    Temp    Humid    DewPt    Press    WindSp    WindDr    Sun    Rain    Start    MxWSpd
#         deg C    %        deg C    mBar     knots              hours  mm      00:00   knots
00:00    12.3    84       9.7     1020    0.0      W         0.00   0.00   00:00   2
00:30    11.8    85       9.3     1020    0.0      NW        0.00   0.00   00:00   2
01:00    10.9    87       8.8     1020    0.7      W         0.00   0.00   00:00   4
01:30    11.4    85       9.0     1020    0.5      W         0.00   0.00   00:00   4
02:00    10.9    87       8.8     1020    0.4      W         0.00   0.00   00:00   4
02:30    10.9    87       8.8     1020    0.0      W         0.00   0.00   00:00   2
03:00    10.9    89       9.1     1020    0.2      NW        0.00   0.00   00:00   2
03:30    10.9    90       9.3     1020    0.4      W         0.00   0.00   00:00   2
04:00    11.4    90       9.8     1020    0.7      W         0.00   0.00   00:00   2
04:30    11.4    90       9.8     1020    0.8      NW        0.00   0.00   00:00   2
05:00    11.8    91       10.4    1020    0.3      W         0.00   0.00   00:00   2
05:30    11.4    92       10.1    1020    0.7      W         0.00   0.00   00:00   4
06:00    11.4    93       10.3    1019    0.8      W         0.00   0.00   00:00   4
06:30    11.4    93       10.3    1020    0.2      W         0.00   0.00   00:00   2
07:00    11.8    92       10.5    1020    1.2      W         0.00   0.00   00:00   4
07:30    14.1    89       12.3    1020    2.3      S         0.13   0.00   00:00   6
08:00    14.5    88       12.5    1020    2.8      S         0.13   0.02   00:00   8
08:30    14.5    88       12.5    1020    3.0      S         0.13   0.02   00:00   8
09:00    15.5    86       13.2    1020    3.8      S         0.13   0.02   00:00  12
09:30    16.4    85       13.9    1020    3.8      SW        0.13   0.02   00:00   8
10:00    17.3    84       14.6    1020    4.4      S         0.13   0.06   00:00  12
10:30    17.3    85       14.7    1021    7.1      SW        0.13   0.06   00:00  14
11:00    16.8    92       15.5    1021    5.0      SW        0.13   0.41   00:00  14
11:30    17.3    91       15.8    1021    2.9      SW        0.13   0.45   00:00   8
12:00    17.3    91       15.8    1021    4.5      SW        0.13   0.46   00:00  10
12:30    17.3    91       15.8    1021    4.3      SW        0.13   0.47   00:00  12
13:00    17.7    90       16.0    1021    4.1      SW        0.13   0.49   00:00  10
13:30    18.2    87       16.0    1021    3.8      SW        0.13   0.49   00:00  10
14:00    18.6    83       15.6    1021    2.9      W         0.13   0.49   00:00   8
14:30    19.1    81       15.7    1020    3.7      SW        0.13   0.49   00:00  10
15:00    19.1    81       15.7    1021    3.5      SW        0.13   0.51   00:00  10
15:30    18.2    88       16.2    1021    3.8      SW        0.13   0.59   00:00  10
16:00    18.6    87       16.4    1021    3.3      SW        0.13   0.63   00:00  10
16:30    17.3    92       16.0    1021    2.6      SW        0.13   2.47   00:00   8
17:00    17.3    95       16.5    1021    0.9      W         0.13   2.66   00:00   4
17:30    16.4    95       15.6    1021    4.6      NW        0.13   3.02   00:00  14
18:00    16.4    96       15.7    1021    5.3      NW        0.13   4.95   00:00  12
18:30    16.4    95       15.6    1021    4.0      NW        0.15   5.01   00:00  10
19:00    16.4    96       15.6    1022    1.3      NW        0.15   5.01   00:00   6
19:30    16.4    96       15.7    1021    0.9      NW        0.29   5.01   00:00   4
20:00    15.5    96       14.8    1021    0.4      NW        0.29   5.01   00:00   2
20:30    15.0    95       14.2    1023    0.2      NW        0.29   5.01   00:00   2
21:00    15.0    97       14.5    1023    0.1      NW        0.29   5.01   00:00   2
21:30    14.5    96       13.9    1023    0.3      NW        0.29   5.01   00:00   2

```

Inaccuracies in the weather data and implementation of the service including the sensors used can be found from the web interface.

However, this website does not give you the information about the amount of solar radiation which you would need for your simulation.

You can get data on solar radiation via Energy Plus Weather website:

http://apps1.eere.energy.gov/buildings/energyplus/cfm/weather_data3.cfm/region=6_europe_wmo_region_6/country=GBR/cname=United%20Kingdom

Note: This is not real time data, but reference values for the all years which are statistically determined from 20-30 year long lasting measurement on one site.

EnergyPlus Energy Simulation Software

EnergyPlus Energy Simulation Software

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Weather Data

Weather Data for Simulation

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Real-Time Data

Third-Party Software

Weather Data

Weather data for United Kingdom are available below. The original source data are described on the [Weather Data Sources page](#). Learn more [about the weather files](#).

All Regions : Europe WMO Region 6 : United Kingdom

Aberdeen Dyce 030910 (IWEC)	ZIP
Aughton 033220 (IWEC)	ZIP
Belfast 039170 (IWEC)	ZIP
Birmingham 035340 (IWEC)	ZIP
Finningley 033600 (IWEC)	ZIP
Hemsby 034960 (IWEC)	ZIP
Jersey Channel Islands 038950 (IWEC)	ZIP
Leuchars 031710 (IWEC)	ZIP
London Gatwick 037760 (IWEC)	ZIP
Oban 031140 (IWEC)	ZIP

File Information

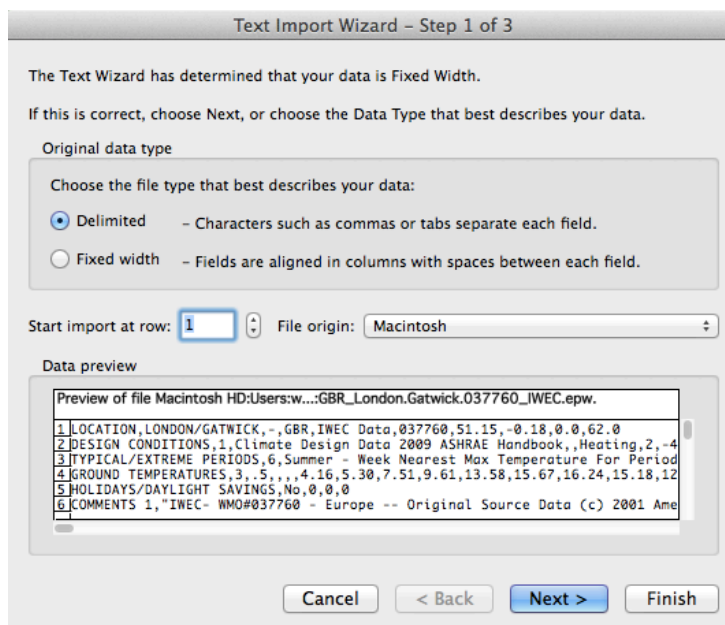
Each file is named using the ISO standard three-letter country abbreviation (i.e. CUB for Cuba), followed by the location name, World Meteorological Organization designation (WMO) and the source format (CTZ2, CWEC, CityUHK, CSWD, CTYW, ETMY, IGDG, IMGW, IMS, INETI, ISHRAE, ITMY, IWEC, KISR, NIWA, RMY, SWEC, SWERA, or TMY3). Thus, *CUB_Havana.782240_IWEC.zip* — is the ASHRAE International Weather for Energy Calculations (IWEC) data for Havana, Cuba, WMO 782240.

The compressed file (ZIP) which contains the following files for the location:

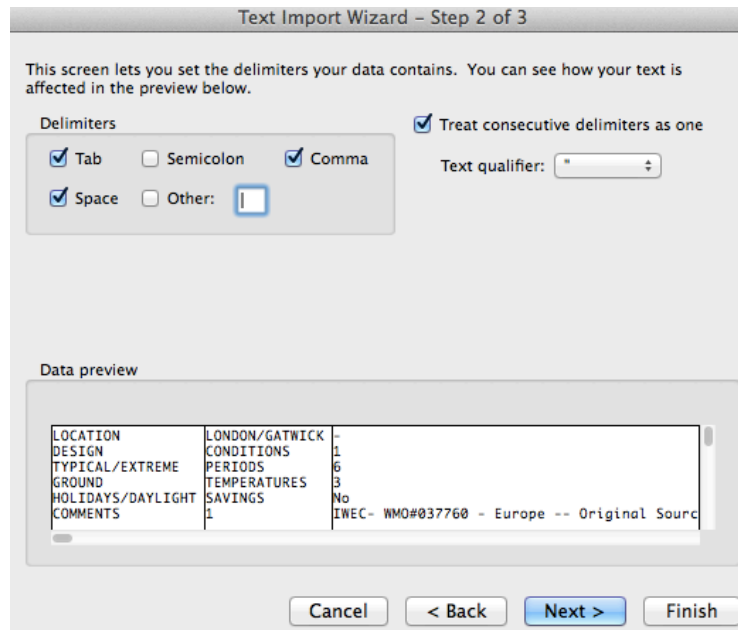
- EnergyPlus weather files (EPW)
- A summary report on the data (STAT)
- An ASHRAE Design Conditions Design Day Data file (DDY).

Download the zip file under ‘London Gatwick’, which is good enough to represent the solar radiation in Cambridge.

Open the file ‘GBR_London.Gatwick.037760_IWEC.epw’ under the folder ‘GBR_London’ in Excel. In the text import wizard window, choose ‘Delimited’ as the file type. And click ‘Next’.



Then tick the boxes in front of Comma and Space. Click 'Next'. Skip step 3 and finish.



Pages 11 and 12 of the document 'Weatherdatainformate' (can be found under Reference tab of the main Cambeep website) gives you information about what each column stands for.

DATA PERIODS

- N1, \field Number of Data Periods
- N2, \field Number of Records per hour
- A1, \field Data Period 1 Name/Description
- A2, \field Data Period 1 Start Day of Week
- \type choice
- \key Sunday
- \key Monday
- \key Tuesday
- \key Wednesday
- \key Thursday
- \key Friday
- \key Saturday
- N3, \field Data Period 1 Start Date
- N4, \field Data Period 1 End Date
- etc --
- ! Actual data does not have a keyword
- N1, \field Year
- N2, \field Month
- N3, \field Day
- N4, \field Hour
- N5, \field Minute
- A1, \field Data Source and Uncertainty Flags
- N6, \field Dry Bulb Temperature
- \units C
- N7, \field Dew Point Temperature
- \units C
- N8, \field Relative Humidity
- N9, \field Atmospheric Station Pressure
- \units Pa
- N10, \field Extraterrestrial Horizontal Radiation
- \units Wh/m2
- N11, \field Extraterrestrial Direct Normal Radiation
- \units Wh/m2

	A	B	C	D	E	F	G	H	I	J	
1	LOCATION	LONDON/GA	-	GBR	IWEC	Data	37760	51.15	-0.18		0
2	DESIGN	CONDITIONS		1	Climate	Design	Data	2009	ASHRAE	Handbook	Heating
3	TYPICAL/EXT PERIODS			6	Summer	-	Week	Nearest	Max	Temperature For	Peric
4	GROUND	TEMPERATU		3		0.5	4.16	5.3	7.51	9.61	13.58
5	HOLIDAYS/D	SAVINGS	No			0	0	0			
6	COMMENTS			1	IWEC- WMO#037760 - Europe -- Original Source	Data	(c) 2001 American Society of Heating, Refrigerating and A				
7	COMMENTS		2	--	Ground	temps	produced	with	a	standard	soil
8	DATA	PERIODS		1	1	Data	Sunday	1/		1	Dec-31
9	1991	1	1	1	1	60	C9C9C9C9*0	2.7	1.1		89
10	1991	1	1	1	2	60	C9C9C9C9*0	1.2	0.2		93
11	1991	1	1	1	3	60	C9C9C9C9*0	0.2	-0.4		95
12	1991	1	1	1	4	60	C9C9C9C9*0	-0.5	-0.8		97
13	1991	1	1	1	5	60	C9C9C9C9*0	-0.8	-1.1		98
14	1991	1	1	1	6	60	C9C9C9C9*0	-1.1	-1.3		98
15	1991	1	1	1	7	60	A7A7E8E8*0	-1	-0.9		86
16	1991	1	1	1	8	60	A7A7E8E8*0	0.7	-0.3		93
17	1991	1	1	1	9	60	A7A7E8E8*0	0.6	0		96
18	1991	1	1	1	10	60	A7A7E8E8*0	2.5	1.2		91
19	1991	1	1	1	11	60	A7A7E8E8*0	5.7	3.5		86
20	1991	1	1	1	12	60	A7A7E8E8*0	7.9	4.7		80
21	1991	1	1	1	13	60	A7A7E8E8*0	8.7	5.6		81
22	1991	1	1	1	14	60	A7A7E8E8*0	8.9	5.8		81
23	1991	1	1	1	15	60	A7A7E8E8*0	8.8	5.7		81
24	1991	1	1	1	16	60	A7A7E8E8*0	8.9	5.8		81
25	1991	1	1	1	17	60	A7A7E8E8*0	8.7	6.3		85
26	1991	1	1	1	18	60	A7A7E8E8*0	8.5	6.6		88
27	1991	1	1	1	19	60	A7A7E8E8*0	8.5	7.4		93
28	1991	1	1	1	20	60	A7A7E8E8*0	8.3	7.4		94
29	1991	1	1	1	21	60	A7A7E8E8*0	8.3	7.7		96
30	1991	1	1	1	22	60	A7A7E8E8*0	8.5	8.3		99
31	1991	1	1	1	23	60	A7A7E8E8*0	9	8.6		97
32	1991	1	1	1	24	60	A7A7E8E8*0	9.6	9.4		99
33	1991	1	2	1	60	A7A7E8E8*0	10.4	10.2		99	
34	1991	1	2	2	60	A7A7E8E8*0	11.4	10.6		95	
35	1991	1	2	3	60	A7A7E8E8*0	11.6	10.8		95	
36	1991	1	2	4	60	A7A7E8E8*0	11.8	10.8		94	
37	1991	1	2	5	60	A7A7E8E8*0	11.9	10.3		90	
38	1991	1	2	6	60	A7A7E8E8*0	11.5	9.5		88	
39	1991	1	2	7	60	A7A7E8E8*0	11.7	9.3		85	

For a most accurate building simulation or for analysis of measurement data of building environment, remember to use all available data from Digital Technology Group weather station and only use the data about solar radiation from Energy Plus Weather file, if you are not able to measure the solar radiation by means of a pyranometer.

You may want to change some columns in the epw file with data from the Cambridge weather station. Please notice that the solar radiation is not the real time data. Remember to save the file as epw format. which is then used in corresponding simulation software.