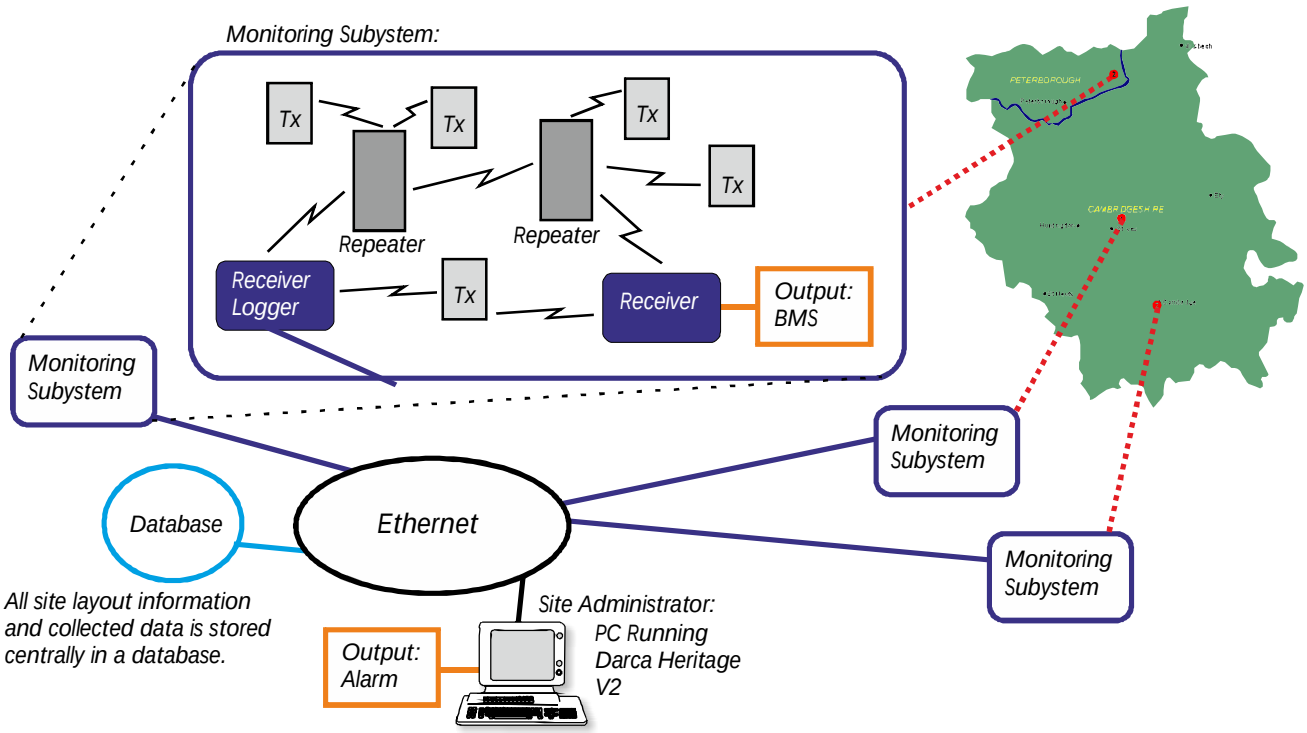
Darca Heritage 2

Eltek
SPECIALIST DATA LOGGERS

Site-based data acquisition, analysis and reporting software for Eltek Gen II telemetry systems

Darca Heritage V2 has been designed specifically for environmental monitoring on a large scale site, with sensors referred to according to their physical location and data accessed by multiple users. It provides powerful but simple-to-use tools for configuring and metering sensors, changing data logger settings, updating site data automatically and analysing up-to-the-minute data either graphically or statistically. All site layout information and downloaded data is stored centrally in a database for ease of maintenance.
Additionally, calculated parameters may be added and analysed alongside measured parameters, and sensors may be metered graphically on user-entered floor plans.

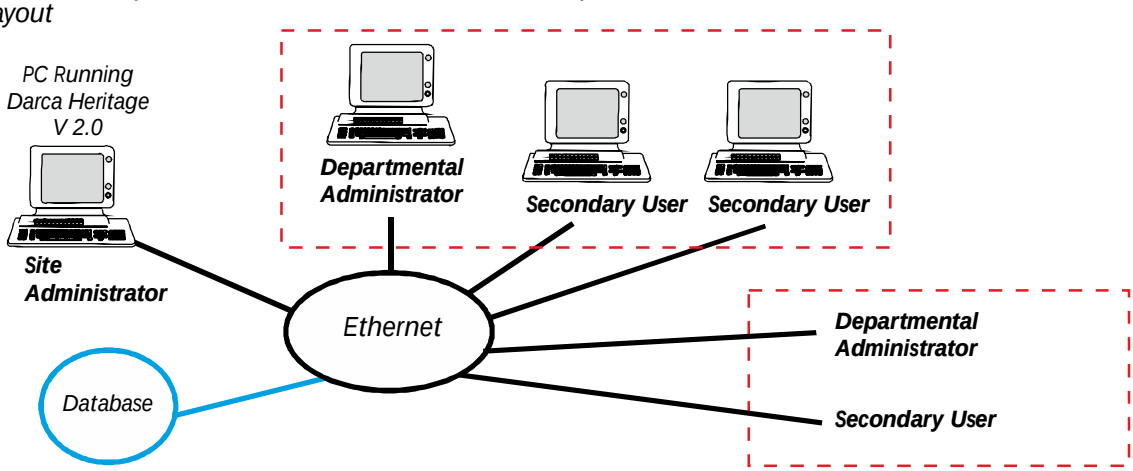
Data Collection



System Users

There are three possible levels of user in a Darca Heritage V2 system:

- *The Site Administrator has full access to Darca Heritage V2's site editing and logger configuration features*
- *The Department Administrators can edit the position of their transmitters in the site, view charted data and view a snapshot of current data values*
- *The Secondary Users can view charted data and a snapshot of current data values but cannot edit the site layout*



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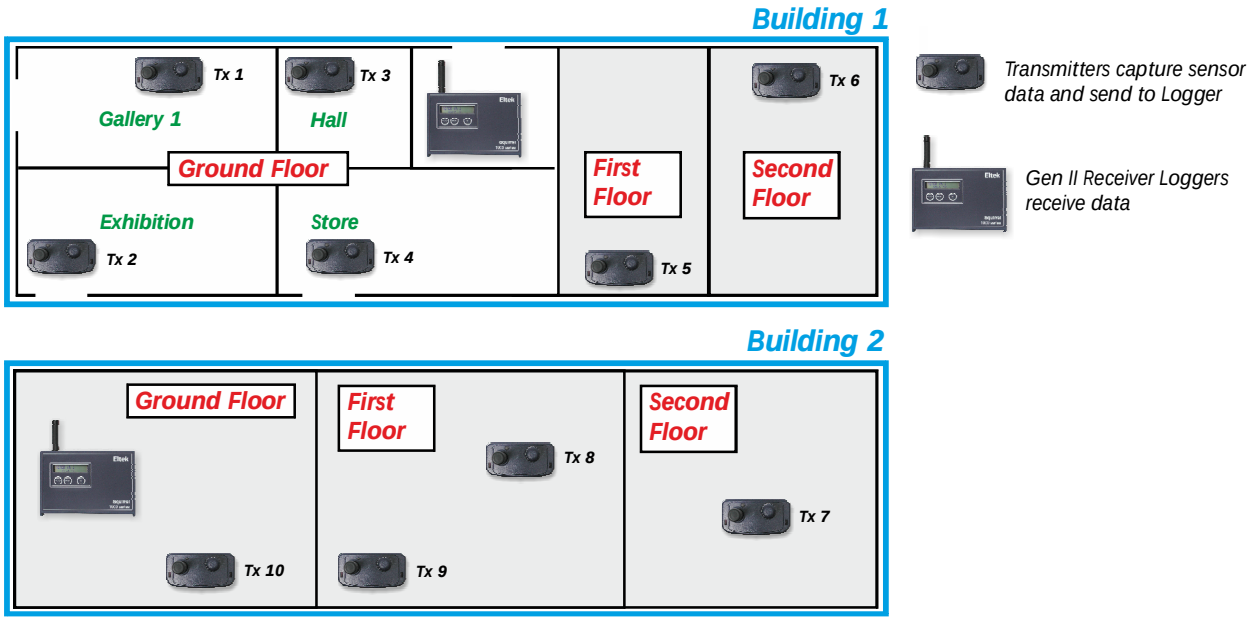
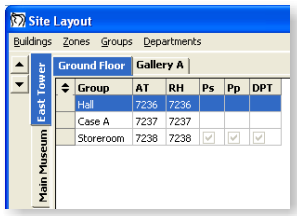
Site Overview

- *The Site is initially divided into 'Buildings'. From there, each building is divided into physical 'Zones', each of which is divided into 'Groups' of measured data points, e.g.:*



Site Setup Features

- *Information about Site Layout is entered into the Site Layout window. Each group contains a number of 'Channels':*



- *Each 'Channel' is of a Parameter Type which may be either a physical sensor or calculated from a formula:*

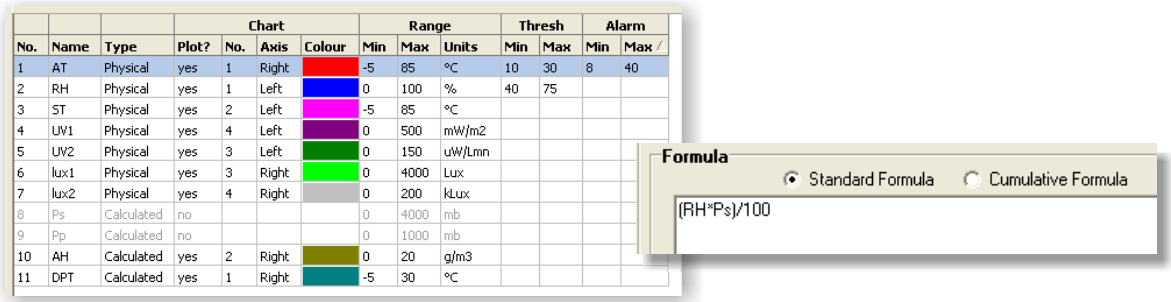
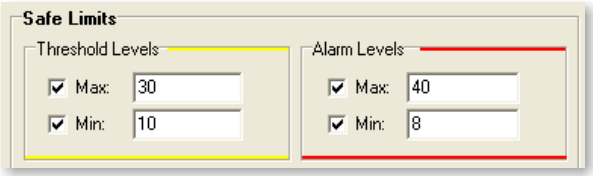
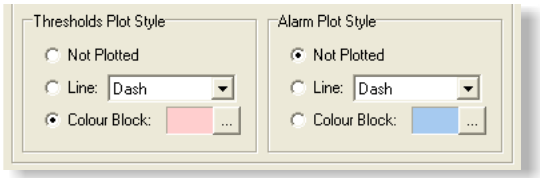


			Chart				Range			Thresh		Alarm	
No.	Name	Type	Plot?	No.	Axis	Colour	Min	Max	Units	Min	Max	Min	Max
1	AT	Physical	yes	1	Right		-5	85	°C	10	30	8	40
2	RH	Physical	yes	1	Left		0	100	%	40	75		
3	ST	Physical	yes	2	Left		-5	85	°C				
4	UV1	Physical	yes	4	Left		0	500	mW/m2				
5	UV2	Physical	yes	3	Left		0	150	uW/Lmn				
6	lux1	Physical	yes	3	Right		0	4000	Lux				
7	lux2	Physical	yes	4	Right		0	200	kLux				
8	Ps	Calculated	no				0	4000	mb				
9	Pp	Calculated	no				0	1000	mb				
10	AH	Calculated	yes	2	Right		0	20	g/m3				
11	DPT	Calculated	yes	1	Right		-5	30	°C				

- *The Safe limits feature warns if any channel inputs are outside of safe limits. Channels outside safe limits appear colour-coded when using the analysis tools and users may be alerted by email or text message when alarm conditions occur:*





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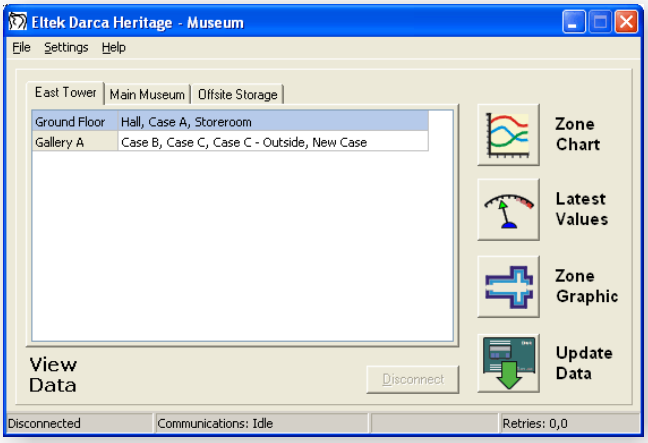
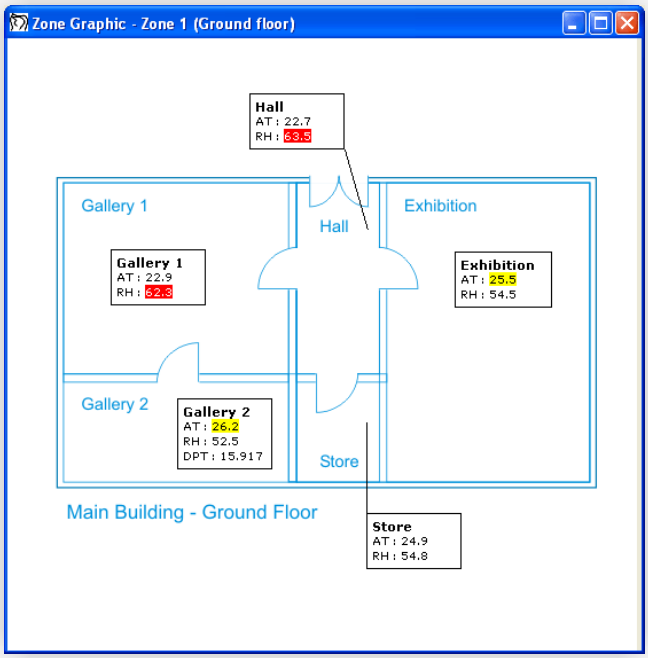
View Data Tools



- *Easily jump to all Zones or a specific Zone when Charting or Metering, by first selecting a building tab and then selecting the zones you wish to view*
- *Data can be manually updated from the Logger(s) with the 'Update Data' tool, or set to automatically update at a specified interval*
- *The database is backed up on every update for security*
- *Status of the logger is displayed from the last connection*

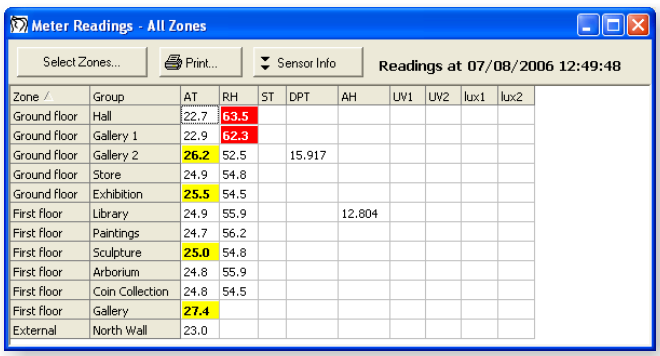
Real Time Metering

- *Data can be metered graphically on user-defined bitmaps which show each group's physical location within a Zone:*



- *Zone Graphic is a bitmap that can be created in any Windows image editor*
- *Positions of groups are saved with the Site Setup*
- *Arrow tool for displaying specific position of group within Zone*
- *Channels appear highlighted in yellow if outside the threshold limits, or in red if outside the alarm limits*
- *Text Comments may be added to the graphic*
- *Multiple Zones can be metered simultaneously on screen*

- *Alternatively, the Meter Grid displays the metered data in numerical form with the option to view multiple zones simultaneously:*



Zone	Group	AT	RH	ST	DPT	AH	UV1	UV2	lux1	lux2
Ground floor	Hall	22.7	63.5							
Ground floor	Gallery 1	22.9	62.3							
Ground floor	Gallery 2	26.2	52.5		15.917					
Ground floor	Store	24.9	54.8							
Ground floor	Exhibition	25.5	54.5							
First floor	Library	24.9	55.9			12.804				
First floor	Paintings	24.7	56.2							
First floor	Sculpture	25.0	54.8							
First floor	Arborium	24.8	55.9							
First floor	Coin Collection	24.8	54.5							
First floor	Gallery	27.4								
External	North Wall	23.0								

- *A time stamp shows clearly when the last reading was stored*
- *'Select Zones' tool gives the option to add any Zone from the Site for easy comparison*
- *Print button prints the metered data*

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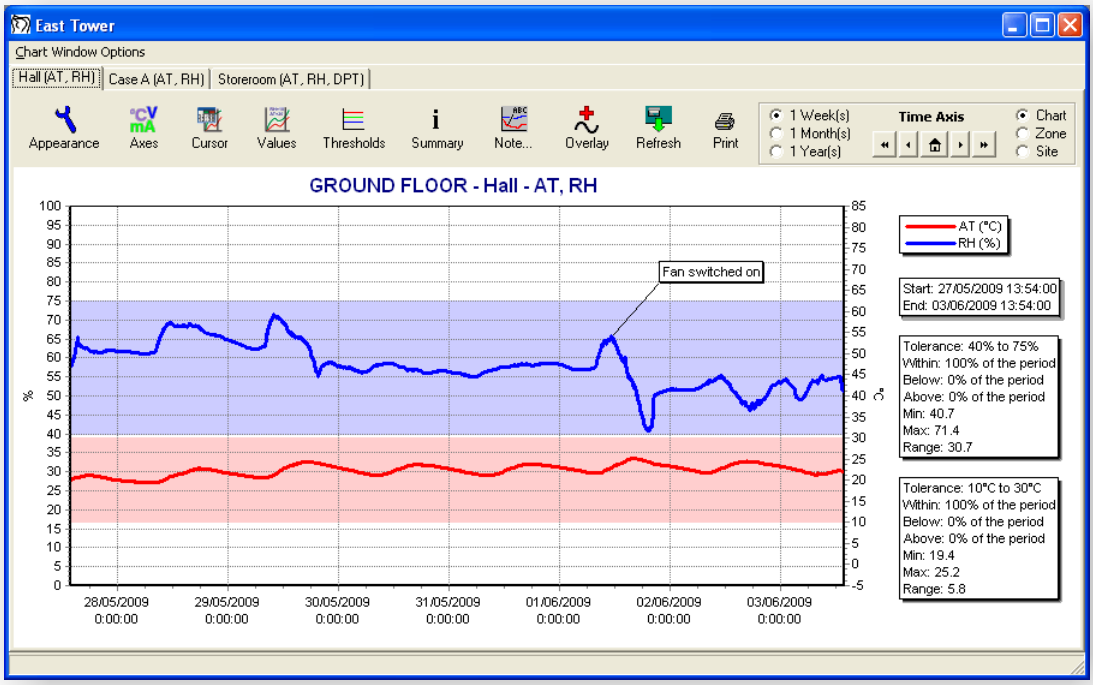
Powerful Charting Tools

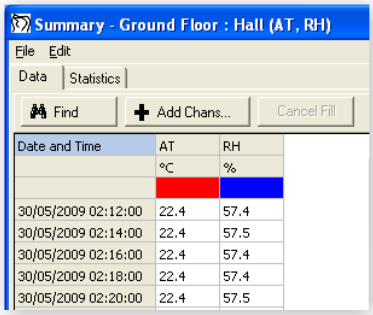
- *The Chart Window displays all the groups within a Zone on separate tabs:*



- *Alarm and threshold limits appear as colour blocks or dotted lines for each channel*
- *Channels from any Zone or Group may be overlayed onto the chart*
- *Top time axis may be added to overlay data from different time periods*
- *Chart can be scrolled and zoomed, and user-defined 'Time Selector' control flicks between different time periods*
- *Appearance of titles. axes, plot colours and graph colours is highly customiseable*
- *Cursor tool to view numerical value of a point on the graph*

Chart Data Summary

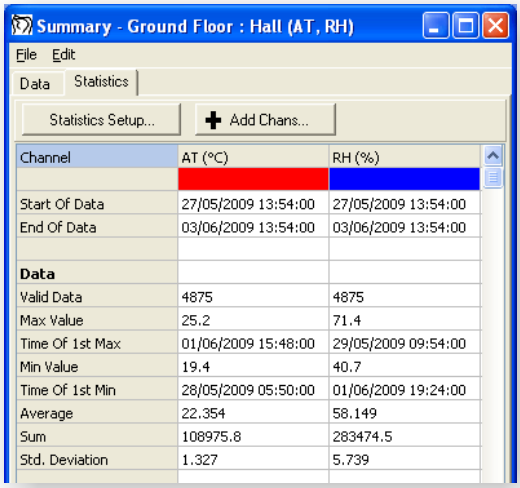
- *Summary window displays all data in current graph view (data from other Zones and Groups can be added for comparison):*



Date and Time	AT	RH
	°C	%
30/05/2009 02:12:00	22.4	57.4
30/05/2009 02:14:00	22.4	57.5
30/05/2009 02:16:00	22.4	57.4
30/05/2009 02:18:00	22.4	57.4
30/05/2009 02:20:00	22.4	57.5

- *Information in summary window can be copied to the clipboard or printed*
- *'Find' tool speeds up navigation when searching for a particular time stamp or reading*

- *Many different statistics can be displayed about the current graphed data including time spent in alarm:*



Channel	AT (°C)	RH (%)
Start Of Data	27/05/2009 13:54:00	27/05/2009 13:54:00
End Of Data	03/06/2009 13:54:00	03/06/2009 13:54:00
Data		
Valid Data	4875	4875
Max Value	25.2	71.4
Time Of 1st Max	01/06/2009 15:48:00	29/05/2009 09:54:00
Min Value	19.4	40.7
Time Of 1st Min	28/05/2009 05:50:00	01/06/2009 19:24:00
Average	22.354	58.149
Sum	108975.8	283474.5
Std. Deviation	1.327	5.739

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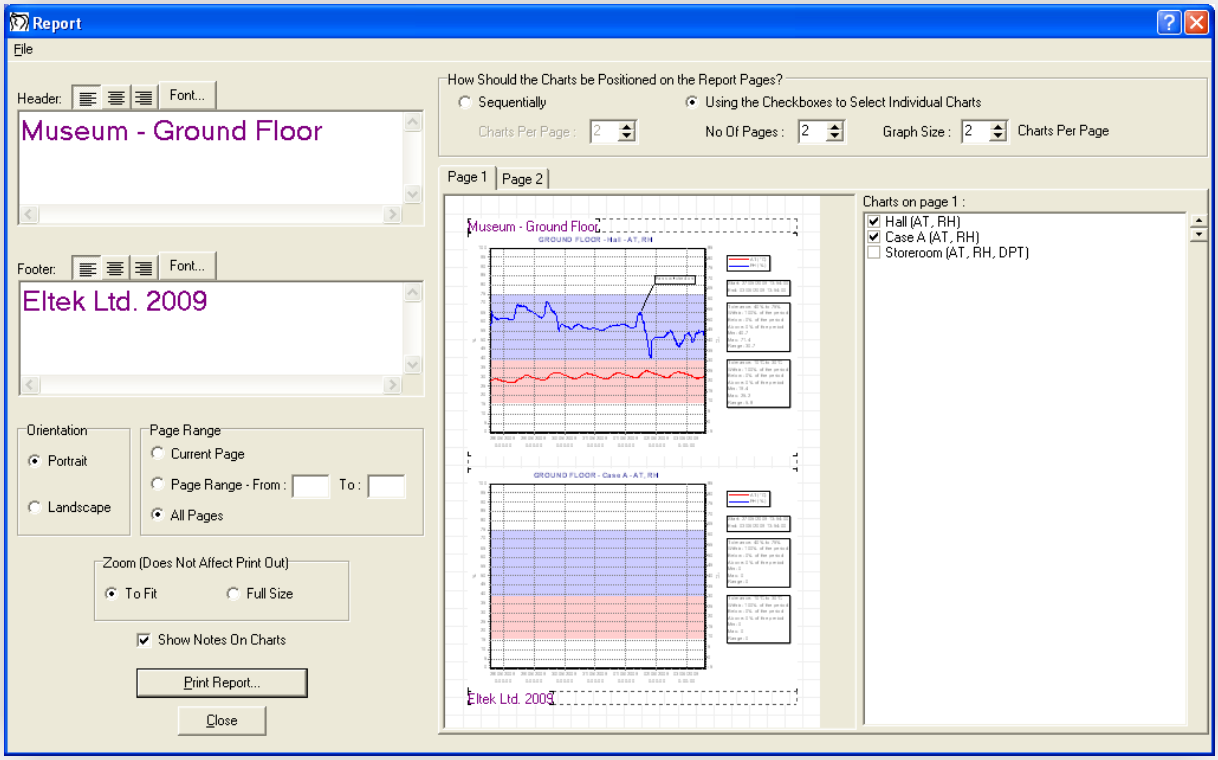
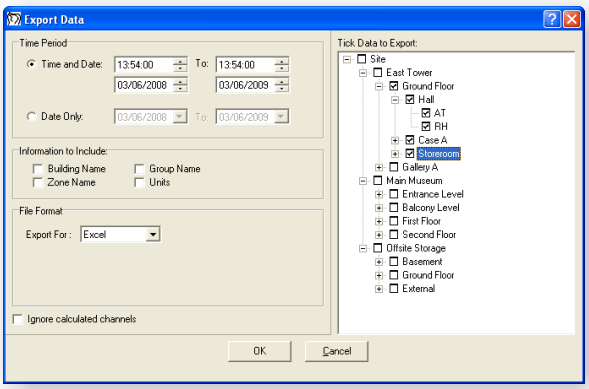
Reporting



- *Graphs of the groups within a zone can be compiled into a report for printing or saving for future reference*
- *Headers and Footers can be added to the report*
- *Size of chart and the layout of the charts on the Report pages can be fully customised*
- *Initial 'Sequential' layout for fast and simple Report setup*
- *Report 'Templates' can be saved for each zone, storing layout and Header/Footer information*
- *Opening a saved Report also displays the Chart Window for the relevant Zone and time period*

Export Data Tool for Advanced Analysis



- *Data from any Groups / Zones from any time period can be exported to raw data file*
- *Advanced analysis can be performed in spreadsheet*

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E-mail and SMS alarm reporting

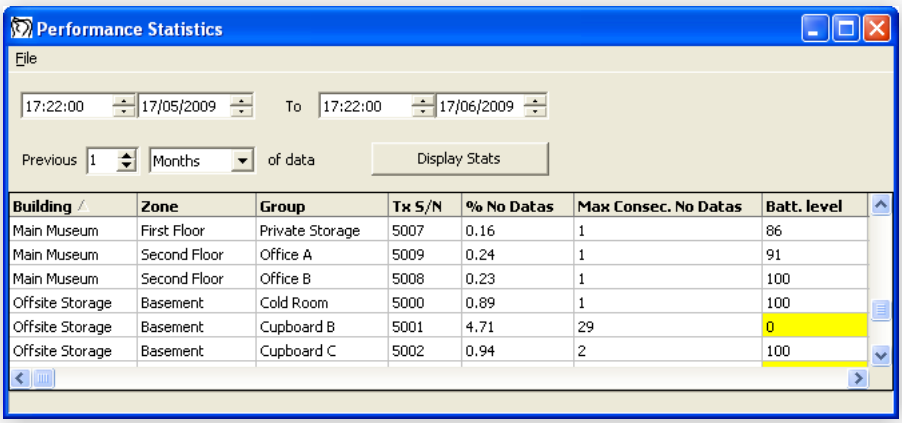
- *Darca Heritage V2 contains the facility to send emails and text messages when alarm conditions occur or when aspects of the system may not be functioning correctly.*
- *Alarm Emailing works by maintaining a list of users, each of which has a number of email addresses and/or mobile phones associated with it. Alarm types can then be enabled/disabled for each user.*
- *The following table shows the various types of alarm which can be included in the email:*

Alarm Type	***Specific Alarm Condition***
Channel Alarm	*Transition from a safe value to an alarm value (low or high).*
3 consecutive no datas	*The logger receives no data from a transmitter for 3 consecutive logging intervals. Alarm is reset when a valid reading appears.*
Transmitter battery low	*Transition from safe battery level value to battery low value (below 20%).*
Unable to contact logger	*When the server's attempt to contact a logger is unsuccessful.*
Darca Heritage shut down on server	*When the software is shut down on the server.*
Performance Statistics	*Sent weekly.*

- *Alarms may also be sent as text messages. Each mobile phone associated with the system can be set to monitor a specific area of the site.*

View diagnosis and performance statistics for the site

- *The Performance Statistics Window gives a quick snapshot of any system maintenance that needs to be carried out.*



Building	Zone	Group	Tx S/N	% No Datas	Max Consec. No Datas	Batt. level
Main Museum	First Floor	Private Storage	5007	0.16	1	86
Main Museum	Second Floor	Office A	5009	0.24	1	91
Main Museum	Second Floor	Office B	5008	0.23	1	100
Offsite Storage	Basement	Cold Room	5000	0.89	1	100
Offsite Storage	Basement	Cupboard B	5001	4.71	29	0
Offsite Storage	Basement	Cupboard C	5002	0.94	2	100

- *The '% No Datas' column shows the percentage of readings from a transmitter that were not received by the logger*
- *The 'Max Consecutive No Datas' column shows the longest run of No Datas for a transmitter. This is useful for finding transmitters whose signal is not being received for extended periods of time*
- *The 'Batt. Level' column shows the battery level of a transmitter in percent*
- *Statistics may be printed or exported as HTML*

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