

BEMS Support Proposal	
Site	Digiplex DHAS
Our ref	EQ-20-S-0304-AK Rev4
Prepared by	Alan King
Date	1 st August 2021



Digiplex DHAS

2-year BEMS Support Proposal



TAKE COMPLETE CONTROL

BEMS Support Proposal	
Site	Digiplex DHAS
Our ref	EQ-20-S-0304-AK Rev4
Prepared by	Alan King
Date	1 st August 2021



1. Foreword

Further to receipt of your email dated 11th September 2020 following the issue of our original support proposal dated 20th November 2019, the subsequent re-issue and following a further review please find detailed herein a summary of our proposed approach for the ongoing support of the BEMS for Digiplex capturing the requests we discussed.

We have removed the use of utilising the latest data analytic technology in driving forward with an intuitive “data driven maintenance” approach, but will be deploying this as a trial at DHAS in demonstrating beneficial use as a commitment by Chatwell.

In the meantime the approach we have adopted is more in tune with a “traditional” approach with the support of the on-site DigiPlex technical teams including proposed sensor calibration activity in-line with the manufacturers guide-lines as captured herein.

Core Support Offering

For clarification please find detailed below the core support offerings we have included for as summarised below :-

CORE SUPPORT OFFERING	
Duration (months)	24
Start date	1 st August 2021
End date	31 st July 2023
Site visits (per annum)	Bi-annual on-site PPM site visits including ½-day training per visit
Breakdown & emergency support	Remote dial-in facility and on-site breakdown support included
Suggested on-site critical spares	Suggested List and Costs Provided

Enhanced “Optional” Support Offering

For clarification and with reference to your email dated 11th September 2020, please find detailed below the enhanced “optional” support offerings that provide you with transparency in the approach that we could undertake in providing a complete rounded approach to BEMS support for DigiPlex as summarised below :-

ENHANCED “OPTIONAL” SUPPORT OFFERING	
On-site Training 2no. Separate 1-week Visits	Costs provided
Tridium SWA Licenses (software agreement licenses)	Costs provided

IN PARTNERSHIP WITH



Chartwell Energy Solutions Limited – Chartwell Technology Centre
Unit 7, Edenbridge Trade Centre, Hever Rd, Edenbridge TN8 5EA

BEMS Support Proposal	
Site	Digiplex DHAS
Our ref	EQ-20-S-0304-AK Rev4
Prepared by	Alan King
Date	1 st August 2021



2. Overview

This proposal is for: The maintenance and reactive support of the Building and Energy Management System (BEMS) following a “traditional” approach

Provided within is detailed information on the levels of maintenance and support services included.

The basis of our proposal is formed upon correspondence between you, our client, and any associated accompanying documentation.

SUMMARY OF COVER	
Duration (months)	24
Start date	1 st August 2021
End date	31 st July 2023
Site visits (per annum)	16no. in total – Based on 4no. consecutive on-site visits during the 1 st 6-months followed by 4no. consecutive on-site visits during the 2 nd 6-months for both years 1 & 2
Allocated hours	Normal working hours (Mon – Fri ; 0900 – 1730)
Breakdown & emergency support	Yes
BEMS manufacturer	Tridium
Additional services	Yes
Site Address	DigiPlex, Holzkogen AS, 1825 Tomter, Norway

IN PARTNERSHIP WITH



Chartwell Energy Solutions Limited – Chartwell Technology Centre
Unit 7, Edenbridge Trade Centre, Hever Rd, Edenbridge TN8 5EA

BEMS Support Proposal	
Site	Digiplex DHAS
Our ref	EQ-20-S-0304-AK Rev4
Prepared by	Alan King
Date	1 st August 2021



3. Cost Summary

YEAR-1	
12 Months Service Support	£9,683 + VAT
Chartwell Connect (remote support app)	£295 + VAT
TOTAL COST (Year-1)	£9,978 + VAT

YEAR-2	
12 Months Service Support	£9,683 + VAT
Chartwell Connect (remote support app)	£295 + VAT
Tridium Software Agreement SWA Fees	£5,324 + VAT
TOTAL COST (Year-2)	£15,302 + VAT

TOTAL COST	
"Year-1"	£9,683 + VAT
"Year-2"	£15,302 + VAT
TOTAL SUPPORT COST	£24,985 + VAT

ADDITIONAL INVESTMENT OPTIONS	
On-site Training 2no. Separate 1-week Visits to capture all necessary shift patterns	£10,851.00 + VAT
Recommended On-site Critical Spares (See Section 10.)	£7,896.90 + VAT
TOTAL COST	£18,747.90+ VAT

This proposal is valid for 30 days from the proposal date. Please do not hesitate to contact me should you wish to discuss our proposal further.

Yours Sincerely,

Alan King – Service Director
 For and on behalf of Chartwell Energy Solutions
 Mob : 07582 308999
 Email : a.king@chartwell-limited.com

IN PARTNERSHIP WITH



Chartwell Energy Solutions Limited – Chartwell Technology Centre
 Unit 7, Edenbridge Trade Centre, Hever Rd, Edenbridge TN8 5EA

BEMS Support Proposal

Site	Digiplex DHAS
Our ref	EQ-20-S-0304-AK Rev4
Prepared by	Alan King
Date	1 st August 2021



4. Support levels



The following table details the service levels included within this proposal.

Full details of the service levels are detailed on the following pages.

If additional service levels are required that are not included within this proposal, please do not hesitate in contacting us.



SERVICE	INCL / EXCL
Scheduled maintenance	✓
Breakdown & emergency support	✓
Chartwell Connect (remote support)	✓



SERVICE	INCL / EXCL
BEMS condition report	✗
Chartwell Connect+	
Remote data analytics	✗
Performance alarms	
Remote energy management	✗



SERVICE	INCL / EXCL
Chartwell Connect+ (additional services)	
BMS hosting	✗
Remote alarm monitoring	✗
Performance alarms	✗
Data driven maintenance management	✗
Chartwell Secure	✗
Energy survey	✗

IN PARTNERSHIP WITH



BEMS Support Proposal	
Site	Digiplex DHAS
Our ref	EQ-20-S-0304-AK Rev4
Prepared by	Alan King
Date	1 st August 2021



5. Scheduled maintenance

Our engineers will service your BMS throughout the duration of the contract as detailed below. We will visit as frequently as stipulated in this contract and will issue a full and thorough report after every scheduled visit detailing our activities for the day and highlighting any areas of concern.



RECOMMENDATION: From our calculations, based on the size of your site, the quantity of controllers and associated points, this is our recommended quantity of service visit for the entire 2-year period. This will ensure that within the duration of the contract all the BMS infrastructure is serviced in accordance with manufacturer guidelines.

SYSTEM INTEGRITY

- ☒ Check controller's status, network and remote communication
Check alarm logs and investigate any faults or sensor alarms
- ☒ Check the operation of the alarm transmission.
- ☒ Check for sensor failures and operation of digital inputs and output devices
- ☒ Battery checks of all main plant controllers
- ☒ Check controller's status, network and remote communication

HEAD END PC (if applicable)

- ☒ Performance and health check for PC and any attached peripherals
- ☒ Ensure proper operation and stability of PC and all peripherals
- ☒ Check and clean PC vents and filters as required
- ☒ Check that graphics screen are correctly linked and displaying sensible values

CONTROLS STRATEGY

- ☒ Check the general operation of the outstation control functions.
- ☒ Check trending or logging and investigate plant running out of occupation.
- ☒ Check optimum start/stop functions for heating and/or cooling
- ☒ Verify controllers time clocks BST/GMT changeover dates
- ☒ Check that VT compensated circuits are functioning correctly
- ☒ Check that heating and cooling Hold off settings are sensible and working correctly

SENSOR CALIBRATION

- ☒ Calibration of key control sensors

SYSTEM DATA BACKUP

- ☒ Outstation and supervisor backups with on-site and off-site storage of data

IN PARTNERSHIP WITH



BEMS Support Proposal	
Site	Digiplex DHAS
Our ref	EQ-20-S-0304-AK Rev4
Prepared by	Alan King
Date	1 st August 2021



6. On-site PPM Schedule

Please find detailed below a “suggested” on-site PPM schedule for your consideration.

Our calculations are based on carrying out “sensor calibration” maintenance tasks every 2-years i.e. 50% in year-1 and 50% in year-2 as well as offering time to investigate any inherent problems with the system that require further investigation/resolution.

We have evaluated the amount of sensors available/installed across DHAS, which equates to 181 in total. Therefore, and using crude maths in calculating the amount of time required to conduct sensor calibration tasks allowing for up to 10-minutes per sensor provides us with an overall time requirement of 1,810 minutes to complete. Based on a 40-hour working week (which equates to 2,400 minutes per week) we anticipate this taking approx. 4-days to complete i.e. 2-days year-1 and 4-days year-2

Our calculated time-line is based on the above as summarised below :-

“Annually” – 1st 6-monthly visit

	DAY NO.	TASK BRIEF DESCRIPTION
	1	Travel/Disaster Recovery Back-ups/Training
	2	Investigation/Resolution of Reported Issues
	3	Sensor Calibration Checks
	4	Investigation/Resolution of Reported Issues

“Annually” – 2nd 6-monthly visit

	DAY NO.	TASK BRIEF DESCRIPTION
	1	Travel/Disaster Recovery Back-ups/Training
	2	Investigation/Resolution of Reported Issues
	3	Sensor Calibration Checks
	4	Investigation/Resolution of Reported Issues

IN PARTNERSHIP WITH



Chartwell Energy Solutions Limited – Chartwell Technology Centre
Unit 7, Edenbridge Trade Centre, Hever Rd, Edenbridge TN8 5EA

BEMS Support Proposal	
Site	Digiplex DHAS
Our ref	EQ-20-S-0304-AK Rev4
Prepared by	Alan King
Date	1 st August 2021



7. Software Agreement License (SWA) Year-2 only

Tridium devices are continually being developed and improved. The result is that Tridium have adopted a Microsoft 365 subscription approach to ensure their clients and support providers that invest in their extremely powerful and flexible product have access to the latest software enhancements and beneficial use.

These are provided in the form of "Software Agreement Licenses" (SWA). As a result please find detailed below the "annual" cost breakdown for Chartwell to maintain the software agreement updates for the Tridium controllers and front-end supervisor installed :-

Item No.	Part No.	Quantity	Cost	
1	SMA-8025-1YR-INIT	13	£	1,346
2	CLNX-10N-SMA-1Y	2	£	2,321
	Total Cost (excl. VAT)		£	3,667

Important Note :- The associated costs for "Year-1" were covered under the supply of the associated Tridium devices as part of the "original" installation.

IN PARTNERSHIP WITH



Chartwell Energy Solutions Limited – Chartwell Technology Centre
Unit 7, Edenbridge Trade Centre, Hever Rd, Edenbridge TN8 5EA

BEMS Support Proposal

Site	Digiplex DHAS
Our ref	EQ-20-S-0304-AK Rev4
Prepared by	Alan King
Date	1 st August 2021



8. Recommended On-site Critical Spares

Based on the equipment installed within DHAS please find detailed below the recommended on-site BEMS critical spares complete with cost breakdown for your consideration :-

Item No.	Part No.	Description	Quantity	Cost
1	Jace 8100	BMS Controller	1	£2,515.17
2	Jace IO-R-34	BMS IO Module	1	£ 276.08
3	EDS408A-MM-SC	MOXA Fibre Switch	1	£ 651.00
4	FOX.TX 0050	24 v transformer 50 VA	1	£ 77.00
5	FOX.TX 0200	24 v transformer 200 VA	1	£ 105.00
6	FOX.PSU-2 060	24 v DC Power Supply	1	£ 91.00
7	RH-S-T-A	Humidity / Temperature Sensor	2	£ 225.54
8	TT-S-ACT	Temperature Sensors	4	£ 316.18
9	PA-699-01	Differential Pressure Sensor	1	£ 181.73
10	LFS103	External Tank Level Switch	1	£ 656.60
11	LFS104	Process Water Tank Level Switch	1	£ 768.60
12	LS-712-A	Tank Level Sensor	1	£1,001.00
13	VF2 65/63	Fill/Drain Valve	1	£ 539.00
14	AMV 435	Fill/Drain Actuator	1	£ 130.20
15	PL-528-6	Liquid Static Pressure Sensor	1	£ 159.71
16	PL-692-1	Liquid Differential Pressure Sensor	1	£ 293.09
		Total Cost (excl. VAT)		£7,986.90

IN PARTNERSHIP WITH

BEMS Support Proposal

Site	Digiplex DHAS
Our ref	EQ-20-S-0304-AK Rev4
Prepared by	Alan King
Date	1 st August 2021



9. Controller ASSET Overview

Please find detailed below an overview of the controller ASSET's and their associated points configured for this project, which have been used as the template in calculating our associated ongoing support costs :-

Item No.	Controller Reference	AI	DI	AO	DO	Virtual	TOTAL
1	CP C0 01A	0	0	0	0	737	737
2	CP C0 01B	0	0	0	0	737	737
3	CP C0 01C	0	0	0	0	737	737
4	CP C0 01D	0	0	0	0	737	737
5	CP C0 01E	0	0	0	0	737	737
6	CP C0 02A	28	22	0	0	519	569
7	CP C0 02B	28	22	0	0	519	569
8	CP C0 03A	28	22	0	0	519	569
9	CP C0 03B	28	22	0	0	551	601
10	CP C0 04	27	134	7	18	59	245
11	CP C0 05	30	104	4	19	75	232
12	CP C0 06	12	31	3	1	474	521
	Total	181	357	14	38	6401	6991

IN PARTNERSHIP WITH



Chartwell Energy Solutions Limited – Chartwell Technology Centre
Unit 7, Edenbridge Trade Centre, Hever Rd, Edenbridge TN8 5EA

BEMS Support Proposal	
Site	Digiplex DHAS
Our ref	EQ-20-S-0304-AK Rev4
Prepared by	Alan King
Date	1 st August 2021



10. Breakdown & Emergency Support

Chartwell provides first-class support in the event of a possible fault with the BEMS. We have allowed within our costs to provide on-site breakdown response as follows:

- 2-hour remote response
- Site attendance based on "next working day attendance" available mon-fri ; 09:00-17:00

All call-out labour and equipment repair or replacement costs are excluded from our proposal. These will be charged at our standard call out labour rates, as per below.

All equipment repair and replacement costs are not included as part of this proposal.

Note : Flight and Sundrie Costs will be charged for additionally

IN PARTNERSHIP WITH



Chartwell Energy Solutions Limited – Chartwell Technology Centre
Unit 7, Edenbridge Trade Centre, Hever Rd, Edenbridge TN8 5EA

BEMS Support Proposal

Site	Digiplex DHAS
Our ref	EQ-20-S-0304-AK Rev4
Prepared by	Alan King
Date	1 st August 2021

**BREAKDOWN & EMERGENCY SUPPORT LABOUR CHARGES**

	Minimum Callout Rate		Additional Hours per Hour	
	Normal Hours	Out of Hours	Normal Hours	Out of Hours
Contract Callout	£435.00	£595.00	£75.00	£95.00
Contract Remote Dial-in	£75.00	£95.00	-	-
Non-contract Callout	£540.00	£650.00	£90.00	£100.00
Non-contract Remote Dial-in	£90.00	£110.00	-	-

	Programmed Day Rate Normal Hours		Programmed Day Rate Out of Hours	
	Full Day	Half Day	Full Day	Half Day
Contract	£525.00	£395.00	£645.00	£495.00
Non-contract	£585.00	£450.00	£695.00	£550.00

* The labour and callout rates will be subject to a discretionary annual increase by either 3% or in-line with the Customer Price Index (CPI), whichever is less.

IN PARTNERSHIP WITH



Chartwell Energy Solutions Limited – Chartwell Technology Centre
Unit 7, Edenbridge Trade Centre, Hever Rd, Edenbridge TN8 5EA

BEMS Support Proposal	
Site	Digiplex DHAS
Our ref	EQ-20-S-0304-AK Rev4
Prepared by	Alan King
Date	1 st August 2021



11. Condition Report

Although this is optional, we always highly recommend a condition report at the beginning of a contract. This serves as a basis for advising what may need to be considered to ensure that areas of improvement needing attention are captured, documented and prioritised for a resolution. The output from such an approach will greatly improve confidence and understanding of the BEMS infrastructure on site(s) with clear steps that can be taken to improve reliability and efficiency of BEMS infrastructure within your site(s).

We can utilise some of the allocated on-site PPM days to carry out a Condition report, or alternatively we can advise on a cost as a separate visit outside of the maintenance schedule.

Depending on the size of site we will spend anything time on site surveying and assessing the BEMS assets. Time is then spent compiling the report and a suitable meeting scheduled to sit down with site staff to go through the report in detail to discuss the findings.



CONDITION REPORT

- Understand the condition of your BMS
- Discuss what needs attention
- Establish what are easy fixes
- Assess the lifecycle of your BEMS infrastructure

IN PARTNERSHIP WITH



Chartwell Energy Solutions Limited – Chartwell Technology Centre
Unit 7, Edenbridge Trade Centre, Hever Rd, Edenbridge TN8 5EA

BEMS Support Proposal	
Site	Digiplex DHAS
Our ref	EQ-20-S-0304-AK Rev4
Prepared by	Alan King
Date	1 st August 2021



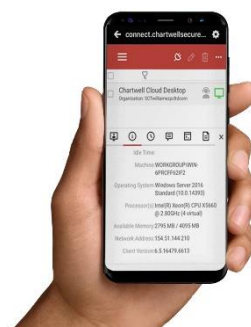
12. Chartwell Connect

Choosing Chartwell Connect not only means you're provided with the support you need from us remotely, but it also means you can support yourself remotely, via access of your BMS from anywhere in the world and on any compatible device using our first-class dial in platform. This includes access from PC; laptop; smartphone and tablet. App available to any Apple or Android user.

SERVICE	DESCRIPTION
<input type="checkbox"/> Remote dial-in support	Multi-platform client access (PC/tablet/smartphone - Apple/Android Anti-virus software) Live screen recording of all sessions Simultaneous dial in sessions (for training or collaborative work) Audited timeline of sessions
<input type="checkbox"/> Operational Support	Set-point adjustments, time-zone changes, remote diagnosis, first fix.

CONNECT

- 24/7 365 head end access
- Ongoing support
- Save on call out charges
- Use as a training tool
- Single login for multiple PC's (where applicable)
- Fully audited and user activity logged



IN PARTNERSHIP WITH



Chartwell Energy Solutions Limited – Chartwell Technology Centre
Unit 7, Edenbridge Trade Centre, Hever Rd, Edenbridge TN8 5EA

BEMS Support Proposal	
Site	Digiplex DHAS
Our ref	EQ-20-S-0304-AK Rev4
Prepared by	Alan King
Date	1 st August 2021



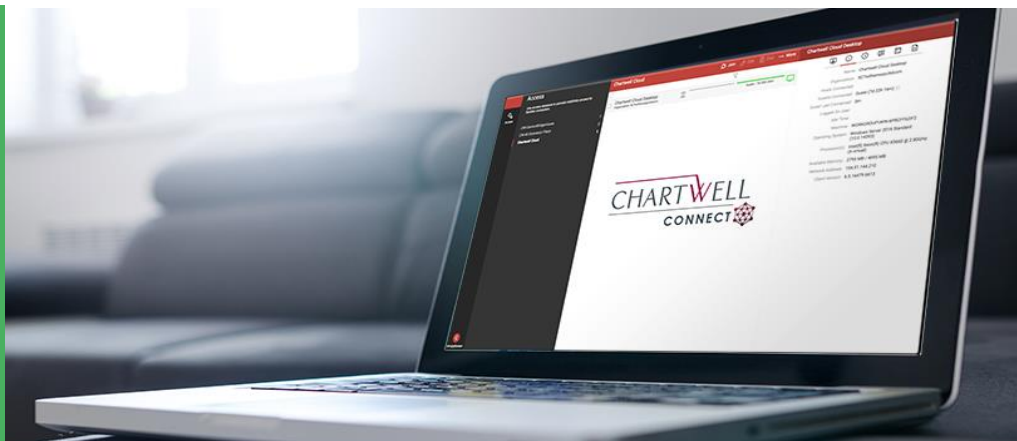
11. Chartwell Connect+

As remote reliability and capabilities grow, so does this valuable service offering from Chartwell. There is a lot we can do for you and your BEMS network without actually being on site. Whether it's managing set points; changing energy consuming behaviour to match building occupancy; helping manage alarms; or using data analytic to establish discrepancies in the BEMS data, Chartwell Connect+ is designed to give you as much value as possible from carrying out a wide range of engineering tasks remotely.

SERVICE	DESCRIPTION
✓ BMS hosting	Host clients head end on bureau server in IQVision (where applicable)
✓ Remote alarm monitoring	Traditional alarm monitoring
✓ Performance alarms	Reactive alarming - Establish performance thresholds with client and implement alarms
✓ Data driven maintenance management	Service items generated from PPM's that can be completed remotely

CONNECT+

- 24/7 365 BEMS network interrogation
- Save money from less site visits



IN PARTNERSHIP WITH



Chartwell Energy Solutions Limited – Chartwell Technology Centre
Unit 7, Edenbridge Trade Centre, Hever Rd, Edenbridge TN8 5EA

BEMS Support Proposal

Site	Digiplex DHAS
Our ref	EQ-20-S-0304-AK Rev4
Prepared by	Alan King
Date	1 st August 2021



12. Connect+ Data Analytics



Honeywell Connected Services



The BEMS is the control gateway of much of a buildings energy consumption and various methods can be implemented to hugely improve a buildings energy consumption using the BEMS. As a market leader in innovative BEMS technology Chartwell has been involved in BEMS data analytics (DA hereon) for many years and we have enjoyed some exciting and rewarding partnerships with various platforms helping some clients save £100k +.

We are specialists and industry pioneers when it comes to using data to interrogate a BEMS effectively which subsequently produces some impressive energy saving and profit increasing results. This clever technology makes us far more efficient, as well as your building(s), making your savings two-fold. a) our labour expense (traditionally it would take us a lot longer to spot what data analytical software can spot in an instant) and b) your lower energy costs.

We have extensive experience with the following data analytical platforms. Having worked with all our DA partners closely over the years on various projects, our technology expertise and our in-house DA platform CIO, means we have a data analytics solution for all budgets, project sizes and BEMS complexities.

The future is in data analytics.

It is comparable to having an **engineer in your building observing and analysing 24 hours a day, 365 days a year.**

- Continuous operation
- Easy return on investment
- Clearer understanding of performance
- Real time monitoring
- Increase comfort levels



BEMS Support Proposal

Site	Digiplex DHAS
Our ref	EQ-20-S-0304-AK Rev4
Prepared by	Alan King
Date	1 st August 2021



13. Chartwell Secure

CYBER SECURITY

- Prevent unauthorised use
- Anti-virus software included
- Restrict PC solely to BMS operations
- 24/7 live PC health monitoring
- Includes Chartwell Secure modem/router

To ensure your site is kept robust, efficient and secure at all times, below we've summarised what our award nominated BMS security solution, Chartwell Secure involves.

Broken into 2 distinct packages as detailed below with or without remote dial in connection. All packages include head-end PC maintenance and 24/7 support, for total peace of mind.

	Remote	Non-remote
Security risk assessment carried out by our specialist BEMS engineers	●	●
All SRA findings reported to client, including all vulnerabilities	●	●
Passwords: complete review of existing protocols	●	●
Passwords: sophisticated password introduced	●	●
Password-protected pc user time-out enabled	●	●
Audit of all system users	●	●
All pc communication ports (apart from maintenance) disabled	●	●
Protection against installation of malware/viruses/unauthorised programs	●	●
Advisory support for head-end software licencing	●	●
Pc restricted to dedicated BEMS use	●	●
Head-end pc health-checked and serviced	●	●
Remote dial-in BEMS support and maintenance	●	●
Individual controller security assessed	●	●
24/7 pc health monitoring	●	
24/7 live virus protection updates and Microsoft security patches	●	
Remote pc support and ongoing maintenance	●	
Hacking attempts monitored and reported	●	
Modem router install	●	
3g/4g data charges	●	



Finalist for 'Innovation of the Year' at the Building Controls Industry Awards (BCIA) 2018

IN PARTNERSHIP WITH



Chartwell Energy Solutions Limited – Chartwell Technology Centre
Unit 7, Edenbridge Trade Centre, Hever Rd, Edenbridge TN8 5EA