www.acewizard.co.uk

ACE WIZARD
MOVING THE BOUNDARIES OF AIR
CONDITIONING ENERGY ASSESSMENTS!

ACE WIZARD
MOVING THE BOUNDARIES OF AIR
CONDITIONING ENERGY ASSESSMENTS!

ACE Wizard Ltd
17B Somerset House
Hussar Court
Waterlooville
Hampshire
PO7 7SG

Telephone: 01420 446202

ACE Wizard User Guide

Provides instructions to carry out an ACE Advanced Air Conditioning Energy Report, CLG Air Conditioning Report, ACE Access Instructions and how to give access to your clients.

Revision 3.1

Date: Friday, 19 February 2021

For: **Assessment Firms, Assessors & Accreditation Schemes**

Prepared for:

Energy Assessors
Assessment Firms Administrators
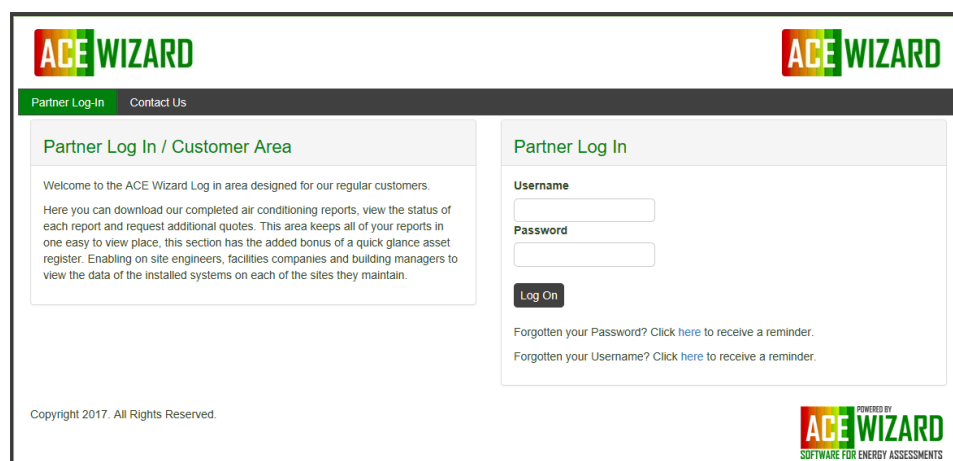**Accreditation Scheme Administrators**

MUCH MORE THAN JUST COMPLIANCE

ACE Wizard Ltd, Suite A, 17B Somerset House, Hussar Court Waterlooville, Hampshire PO7 7SG.
Company Reg: 9291085. VAT No. 216 5999 71. TEL: 01420 446202

Contents

Access & Navigation

ACE is available as a white labelled service with a firm specific URL, Colour Scheme and Logos replacing the default ACE schemes shown throughout this document. For all other users access to ACE Wizard is via the following URL: https://system.acewizard.co.uk/

Partner Log In / Customer Area

Welcome to the ACE Wizard Log in area designed for our regular customers.

Here you can download our completed air conditioning reports, view the status of each report and request additional quotes. This area keeps all of your reports in one easy to view place, this section has the added bonus of a quick glance asset register. Enabling on site engineers, facilities companies and building managers to view the data of the installed systems on each of the sites they maintain.

Partner Log In

Username

Password

Log On

Forgotten your Password? Click here to receive a reminder.

Forgotten your Username? Click here to receive a reminder.

Copyright 2017. All Rights Reserved.

User Access Details

You will need a "Username / Partner Log In" and "Password" to access the system as shown. These have been provided below.

Username: _____

Password: _____

Different User Access Levels & Users

This document will primarily focus on the "Energy Assessor" user role which allows a user to create, update, manage, review, and generate an ACE Advanced Air Conditioning Energy Report and at the same time a CLG XML file for consumption through an accreditation scheme from a project in ACE. The full list of user roles in ACE includes:

➢ Energy Assessor - Supports a Subcontracted or an Employed Assessor working for an Assessment Firm.
➢ Assessment Firm Administrator – Allows an Assessment Firm to review and manage multiple assessments for multiple assessors across their clients.
➢ Lodgement Firm/Accreditation Scheme – Allows the accreditation body to review and audit projects carried out through ACE and lodged through their accreditation scheme.
➢ Read Only User – The read only option allows a user to view projects and run database reports across the projects linked to their account.
➢ AC Database User – Provides access to over 13,000 Air Conditioning systems with energy and performance data on air conditioning systems (currently 6000 systems are linked to manufacturer's system data files).

The ACE Software is also used outside of the energy assessment arena as it provides the functionality for Air Conditioning Maintenance firms & Building Managers to record a building's F-Gas testing and inspection logbook for equipment containing fluorinated greenhouse gases.

Linked Assessment Firms (Parent/Child Firms)

An assessment firm may carry out work on behalf of other firms, such as an Air Conditioning Maintenance, Facilities Management, Energy Management, or a Property Management firm, as a Sub-Contractor. ACE supports this

relationship through a Parent and Child structure; this enables the company name, addresses, logos, lodgement profiles, insurance details and user access levels to be maintained with integrity for all parties.

System Navigation

When you first log in to ACE, you will be asked to change your password, enter an email address for password & username recovery, accept the ACE Wizard Terms of Use and our Data Privacy Policy.

Once logged in, the users will land on the "Inspection" page or "Your Inspections" page and will see all projects created by or relating to the user's role specified in ACE.

Note: the following image is taken from an assessor who is also administrator for an assessment firm.

The tabs displayed are.

- **Contact Us** – Can show the Assessment Firm's contact details if set up (the default is to show ACE Wizard Ltd contact details)
- **Inspections** – Shows all inspections carried out by the assessor and is the landing page for all assessors.
- **Your Inspections** – Shows the end client view of all projects created by the assessor.
- **Data Reports** – Run reports against all project data captured

ACE Wizard Ltd, Suite A, 17B Somerset House, Hussar Court, Waterlooville, Hampshire, PO7 7SG

- **Lookups** – Search our Air Conditioning system database of over 13,000 cooling plants containing manufacturer's information covering the Refrigerant Type, Refrigerant Weight, Cooling Capacity, Heating Capacity and Energy Efficiency Rating. You can also manage the Assessment Firm, Client Names, End User access accounts and Assessors linked to your assessment firm.
- **Administration** – Allows the assessor to manage their ACE user account, Lodgement profiles and Lodgement Insurance Details.

Throughout ACE, further information can be seen by clicking the "Expander Triangle" *shown in the green circle* to expand the visible information displayed to the user. The "Open" button is only shown to assessors and Assessment Firm administrators, this opens the project to the assessor/administrator to create, modify or delete project information. The "Edit" button will allow the assessor/administrator to edit the top-level detail such as site name, address, UPRN etc. of the project without goi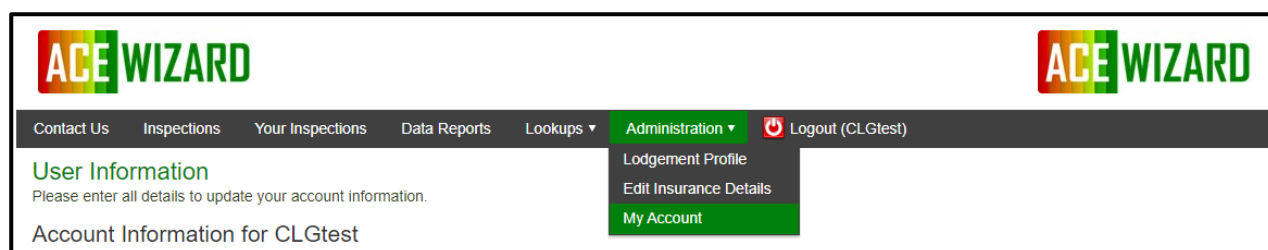ng into the project fully. "View Report" opens a live view of the ACE Advanced Energy Report and all TM44 Inspection data presented in the CLG Report and Certificate in an easy to navigate webpage for the assessor to review.

Managing your Account & Profiles in ACE

A user can maintain and modify their Username, Password, Recovery Email, and marketing preferences by selecting the "My Account" from the "Administration" menu.

Creating and updating your Lodgement Profiles

ACE supports multiple lodgement profiles and the related insurance details to enable an assessor to lodge inspections under different assessor numbers with one or multiple lodgement houses. These can be managed from the "Administration" menu as seen above.

To maintain the Insurance details for all profiles, navigate to the "Administration" menu and select "Edit Insurance Details" option. All parent and child firm's insurance details linked to the assessor can be managed from this one

page. Where multiple assessors use the same insurance details for the linked Assessment firm (Tester in this example), these details will automatically filter through to all assessors linked to the relevant assessment firm were permitted by assessment firm administrator. *Note: An assessor can update these details at a local level only.*

Lodgement profiles and assessor qualifications are managed by the assessor from the Administration menu as shown in the below image. As with insurance details, all lodgement profiles associated to the assessor can be maintained from this page for all assessment firms linked to the user account. To manage the Assessor Name and

Certificates click the "Edit Default Profile" button. To add or change the Assessor ID and Accreditations Scheme click the Edit button on the right.

Note: For Assessment Firm Administrators, the Insurance details can also be managed at the assessment firm level by selecting the "Edit Assessment Firm" tab from the "Lookup" Menu and selecting the "Edit" button.

Creating a new Project / Inspection

Click "Add Project" button to create a new site to be inspected.
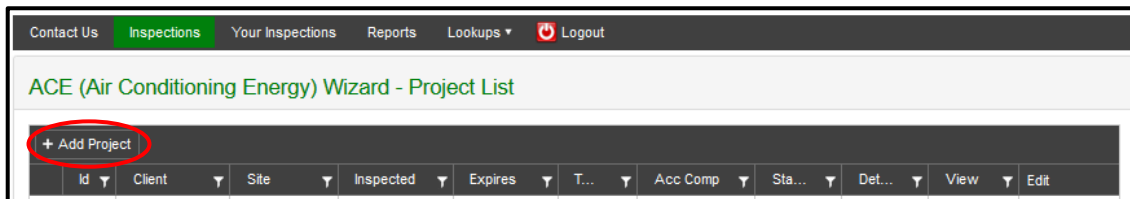
You will be presented with a screen asking you for client and building information, (see right) fill each box in accordingly.

When filling in the "Add/Edit Project" page, please note the following:

1. The "Assessment Firm" (AF) is the company who you are doing the work on behalf of. This ensures all the stored data associated to the Assessment Firm is inherited into the project such as Lodgement Profiles, Company logo, Colour Scheme, Library Templates. *Note: Assessors will only be able to select the AF or the child AF linked to their profile.*

2. Selecting the AF will activate the Equipment Owner fields.

3. If the assessor's lodgement profiles have not been completed in ACE, the Assessor Name and Assessor Number will be blank and can be manually added.

4. Inspection Date is the date of the site visit.

5. Equipment Owner/Operator Company Name (End Client) is intended to be the name of the company the certificate has been commissioned by and not the name of the FM or AC maintenance company who may have sub-contracted the inspection to the Assessment Firm. *Note: As ACE allows the "End Client" access to review all their projects, once the "End Client" name is saved it cannot be changed from the project level and must be changed via the Client tab stored under the "Assessment Firm" details shown on the previous page.*

6. The Contact Name and Contact number are linked to the Equipment Owner Company Name to ensure consistency across assessors. The second field, "Contact Name" should be the name of the person responsible for overall control of the Air conditioning / Energy management for the client's company. This name will be transferred into the CLG XML file for lodgement.

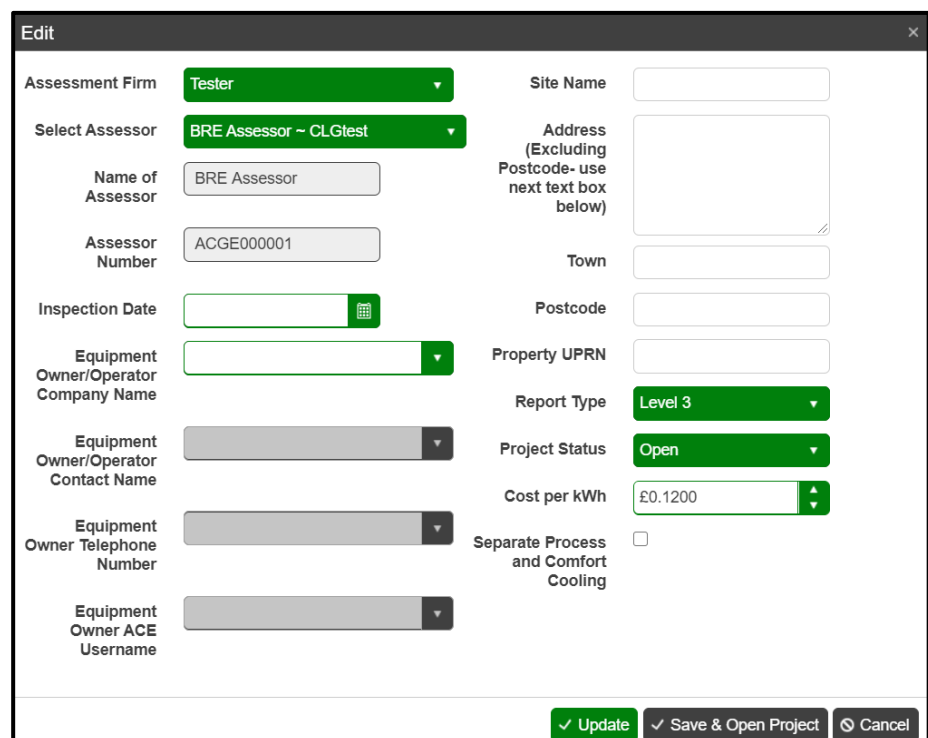7. Equipment Owner ACE Username (The End Client username) – This field is a free text field and must be completed before a project can be created. *Note: Where the project is for a repeat client such as for portfolio work, the Equipment Owner ACE Username will already be available to select in the dropdown field. This ensures all projects created for the same client are available for the end client to review from one End User account.* For a new client please remember the text added in this field will be the username for the end client to access the report through the ACE Wizard system.

8. Site Name – This is the building name such as ACME House or the name the End Client knows the site by, it should not be same name as the Equipment Owner.

9. Address & Town – ACE does not currently provide an address look up, please confirm the address via your accreditations firm's lodgement portal and manually enter the address into these fields.

10. Property UPRN – Currently an assessor will need to manually find the UPRN from their accreditation scheme and add this to the project. If a UPRN does not exist, please leave this field blank.

11. Project status – There are 4 status types for a project.
    a. Open – For all new projects created which are "Work in Progress".
    b. Draft – When the project is ready for client or peer review *(Note: The project can only be viewed by the End Client if the project status is set to "Draft" or "Closed")*. Any draft documents can only be seen by the end client if they are saved as PDFs, all other documents types can only be seen by the assessor.
    c. Closed/Client Owned – When the project has been lodged, you will be prompted to close the project. Once closed the full project is cloned automatically and the copied project passed to the client as a client owned version. This allows the client to use the data gathered in the ACE Advanced Report on an ongoing basis such as an F-Gas logbook or PPM system without changing the data created by the assessor. *Note: Report or Certificate PDF's uploaded to ACE cannot be removed or edited by the client in the "Client Owned" version.*
    d. Template – This option allows an assessment firm to create a base line project for use on portfolio work to save time for the assessor to create and complete the report using the ACE system. Templates only display to assessors linked to the relevant assessment firm.

12. Separate Process and Comfort Cooling – The default option on a project is to combine the Comfort & Process cooling on the ACE Advanced Report. Where a client wishes a more detailed breakdown and when there are areas which have completely different process and comfort cooled areas served by separate systems, such as offices and a large server rooms, assessors can opt to separate the types of cooling off.

13. The remaining boxes do not need to be edited at this stage.

14. Click update to save the top-level project detail or click "Save & Open" to go directly into the new project.

Best order to complete an ACE Inspection.

If you clicked "Update" the assessor will be taken back to the "Inspection" page, to enter the project click the "Open" button. If you clicked the "Save and Open" button you will already be on the "Units" tab in the project.

You are now in the project view and are ready to start adding information.

Although you can complete an ACE Wizard project in any order the following is recommended until you are familiar with all fields and how the data captured in one part of the project impacts other areas.

Time-zones, Add AC Units, Add AHUs, Add Chilled Water Pumps, Room Sizing, Maintenance, Photos, TM44 Inspection Fields, Recommendations, Validation, Export and Attachments.

Time zones

If you do not complete this section, ACE cannot produce the energy and cost saving estimates for recommendations and building/system operational costs on the ACE Advanced Energy Report.

Three time zones are created by default and these will need editing to align with the site operating times. It is a good idea to fill out Time Zones first before completing any other sections in ACE. Create as many Time Zones as you require and delete any un-required Time Zones, for example delete the Time Zone 'process cooling' if there are no process cooling areas such as server rooms on site. *Note: We currently recommend setting a Time Zone up specifically for chillers to avoid confusion and helps present more representative costs savings.*

ACE Wizard Ltd, Suite A, 17B Somerset House, Hussar Court, Waterlooville, Hampshire, PO7 7SG

The "Edit" button allows you to edit the top-level details of the Time Zone, allowing you to change all elements of the time zone including the Time Zone name. *Tip: We would advise giving the Time Zone a name which helps the end user understand the report such as "Chiller Comfort Cooling".*

Display order - is the order the Time Zone will display on the Time Zone Tab in ACE (as shown above) and in the Advanced ACE PDF report. (Table 5 - Surplus Times Zones Schedules Costs) If no display order is set, ACE will list the Time Zones alphabetically by Time Zone Name.

Time Zone multiplier - This defaults to 52 weeks' operation as most systems are used for heating as well as cooling. You can reduce this to between 21 - 28 for cooling only systems. This will depend on which part of the country you are in and how warm the building gets. But it is unlikely that Mid - North Scotland will require cooling for more than 21 weeks a year, whereas Southern England will expect around 28 weeks of cooling to some level (Based on UK hours where the temperature is above 15°C). Process cooling systems, due to room heat gains from IT equipment are usually likely to be operating 52 weeks a year.

Time Zone Type - This field specifies if the Time Zone is set as a Comfort, Process or Mechanical Ventilation zone.

Time Zone calculation hours - Choose to base the calculations in the ACE report on either the occupancy hours of the building (Recommended if the client has not set timers on controllers) or plant set times (Recommended if timers are set on controls)

Note: - There is no facility to allocate more than one time zone to a single AC external unit. For systems, such as VRVs which can have different hours set on multiple internal units, we recommend you set an average or the most common used or your best judgment to base the calculation on.

Always keep mechanical ventilation as a separate time zone from cooling plants. And it is advised that process systems are also kept separate from comfort cooling systems.

You are now ready to add the scheduled hours using the "Expander Triangle" on the left-hand side, then click "Edit" for Monday. *Tip - You can set a whole week's time scheduling just by clicking on the edit button on Monday and checking the box "Set for entire week" or choosing "Monday - Friday" and click update.*

If you have already added an A/C system into ACE, these systems can be linked to the time zone via the "Linked AC Units" tab and clicking "Add New Record". All systems already captured in ACE will be visible for selection.

Note – When adding an A/C unit these will be automatically added to the time zone selected as part of the A/C creation process and can be modified at the A/C level or the time zone level.

Add A/C Unit:

Next, build your asset list from the "Units" tab using the ACE Wizard system database and click the "Add AC Unit" button.

The page is split in to "AC Unit" & "Unit Details", begin by populating the data on the left-hand side.

Asset ID – Please use a unique name for each system on a site such as the client's asset label or AC01, AC02, AC03 etc.

Location – The area the external unit is sited.

Area Served – Type the room name the system is serving (the room will be automatically generated in the ACE Room section tab with default sizing details), when you add any subsequent units to the project, If the room has already been created, the area served will be available to select via the drop-down arrow or by simply starting to type the area served name.

Manufacturer – Start to type the manufacturer in the box and all possible selection options will appear based on the text typed. Alternatively, if you know the Model number, start typing this in the **Make/Model** field. ACE will start to search our system database as you type. With over 13,000 systems and more being added weekly, most systems will be in the ACE system database. Once selected the "Unit Details" section will populate with system data. *Note: If there is no matching system in the database, please follow the instructions on the next page.*

Time Zone – Select from the drop-down list which is derived from the time zones already set up earlier.

Approximate Age & Condition – These are mandatory fields.

Date Lookup - Can be used where you may not know the install date of a system. If the system is in the database, it will display a list of previously entered dates for that system which you can select from. If you would like to edit the date, simply click "remove date".

Serial Number – For inspected systems we advise entering the serial number here if known, the serial number will also appear on the ACE Asset List the client can run once the project has been complete and shows in the ACE Advanced Energy Report.

Server / Process Room – This box will be automatically ticked if you have assigned the system to a "Process Cooling" Time Zone. You do have the ability to override and untick the box if needed.

All details on the "Unit Details" side of the above image can be edited to align with the information found on site. *Note: For a TM44 inspection, it is not a mandatory requirement to input any of the heating energy data. These details have been included for reference and are a part of the database.*

Capacity Control – ACE will automatically select the method of capacity control for systems in our database and populate the description box with the appropriate. This can be edited and there are various options within the drop-down menu. The data input here will be pulled through to the relevant cooling plant inspection fields in the report. *Note: For systems with part load cooling capabilities the "Part Load Capability" must be ticked for the text to be pulled through and for correct energy consumption calculations to be applied throughout the report.*

Unit Details (Data Confirmed) – Where new systems are found, the information provided by the assessors will be validated against manufacturer's details by ACE Wizard, if data cannot be confirmed this box remains unticked and deems the information is based on the information captured only from the system on site and may not be accurate.

Systems not in ACE Wizard database – When adding systems which are not in the database, select any system from the same manufacturer and amend the "Unit Details" data on the right-hand side manually.

if you do not know the refrigerant weight for a system, you have the option to leave this field blank and a comment that will be generated in the ACE report below every relevant table stating.

"As the refrigerant weight contained within "System" could not be established, it has been excluded from the total site refrigerant quantity calculation."

*For any systems not on our database please tick the **"Submit for Review"**, ACE Support will take the information you have provided and do our utmost to validate this with the system manufacturer or find any supporting documentation. We will then look to make this available in our database for all users. If you find system PDFs which are not on our database, please email them to* support@acewizard.co.uk. *We look to review all submitted systems not on our database once a week.*

This comment will be inserted below every table containing refrigerant data. And similar comments will be made if you leave the other 2 fields blank (Cooling Capacity and Energy Input Rating). Try it for yourself to see how it works. *Note: You can also learn how to add systems not in the ACE database by clicking the following link.* *https://www.youtube.com/watch?v=7odfNZAcalk*
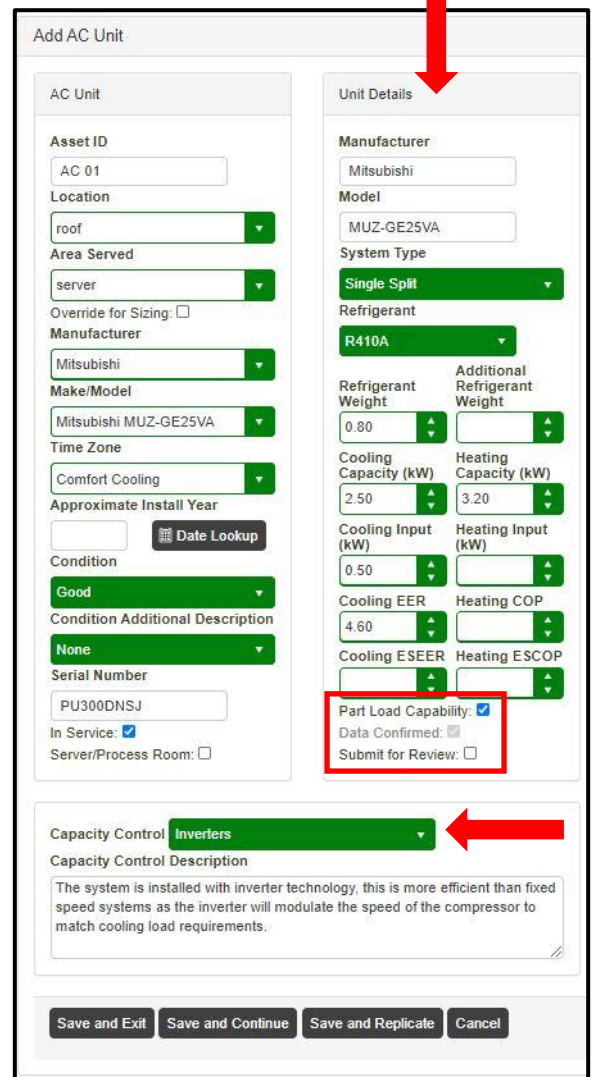
To complete a thorough report however, it is always better if you can fill out all the fields, but this can obviously be difficult to get all the data. Model numbers and your best friend "Google" can help work out cooling capacity and other system data.

TIP – For the ACE Advanced Report, if you do not know the actual Energy Input Rating then a best guess approach will permit energy calculations to be made and help give the client a reasonable understanding of their operational costs.

The following rules of thumb will help deduce the Energy Input Rating.

R410A systems - Aim for an EER (Energy Efficiency Ratio) of between 2.8 - 3.2 (so divide the cooling capacity by around 3, depending on size and age of the unit. Larger and older R410A systems are more likely to have the lower EER of around 2.8).

R407C & R22 - Aim for an EER (Energy Efficiency Ratio) of between 2.5 - 2.8 (so divide the cooling capacity by around 2.6, depending on size and age of the unit. Larger and older systems are more likely to have the lower EER of 2.5 - 2.6).

Override for Sizing – Ticking this box will bring up an additional field "Sizing Area" where you can assign the system to an existing area for sizing, this ensures that the system on the asset list correctly displays the area served but will also be included within the relevant sizing area for calculation purposes.

For example, a split system serving a "Meeting Room" which is also served partly by a main chiller serving "all areas". In this case you would check the "Override for Sizing" box and enter the area served by the chiller, the system will now be included within the relevant area for calculations but will still display on the asset list as serving the "Meeting Room".

See example on the right of how this will display on the asset list.

Note: Help video available on using the Override for Sizing option in ACE

https://www.youtube.com/watch?v=pN6airBRVHE

You are now ready to save the system, if you have no more systems to add click "Save & Exit", to enter a new system from scratch click "Save & Continue", to enter a similar or identical system click "Save & Replicate". Replicating will duplicate the AC unit and most of the references, remember to change the condition, age, location, or room served if you need to on this replicated system. You will also see when you replicate a system the "System" name has a suffix of "001". This is to prevent a report ever having more than one system with the same name. We would advise changing the replicated system name to the next number in your own sequence such as "AC02" or use the client's asset tag. Once an asset list has been completed, at the top of the page you will see a search/filter system where you can filter the A/C systems by various categories such as time zone, area served, refrigerant type, manufacturer and system type.

Add Chillers

Chillers are added through the same steps as an A/C unit, with chiller details imported into the "AC Unit Chiller Details" Section shown below. (Note: the chiller details will only show if the system type is set to chiller) The detail of amending these sections will be covered with additional training.

Important Note: *To get the most out of ACE, we recommend adding all the condensers found on site to the project not just the inspected systems. ACE will calculate the site cooling capacity, include the operational costs, energy consumption, system energy efficiency, F-gas data, and factor in the impact the recommendation savings will have on these systems as well as the inspected systems. You can add a single "Unknown" unit and edit this text in the "Unit Details" and manually add up all other non-inspected systems and add the data in to these fields. However, in practice using the ACE database to build the full external cooling plant asset register in ACE tends to be just as quick and provides all the benefits listed above and provides your client with a new and up to date external cooling plant asset register.*

Add AHU:

If there is mechanical ventilation at site, add this data next by selecting "Air Handling Units" tab and click "Add New Record" button.
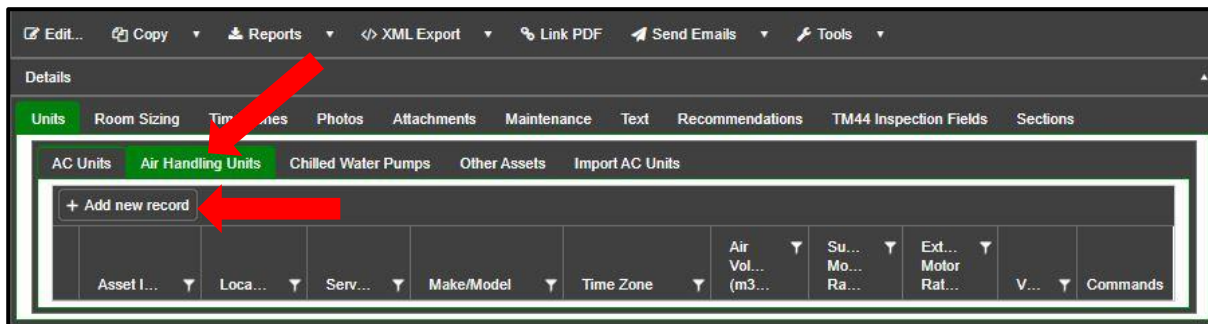
As with the A/C Unit please create a unique system name for each AHU system recorded, most fields are then completed manually.

Enter the area served and if a cooling plant serves the area it will be linked to that system, if not ACE will create a new area. *Note: Do not size an area served by an AHU with no other cooling.*

The "Area Type" drop down menu has a list of the most common areas with the estimated required air changes per hour. Currently it is not possible to customise these figures and it is therefore best to select the option most like your requirement.

ACE has a small database of HRUs (Heat Recovery Units). Input the manufacturer and start typing the model number, for example, Manufacturer: Mitsubishi. Model: LGH-100RS2-E2, it will fill in the data for you.

Note: Within AHU data there are certain fields that can be left blank which will mean certain "rule of thumb" comments will be generated at the end of relevant AHU tables in the ACE report.

When adding an AHU, if the boxes labelled "Speed Controlled/VSD" (Variable Speed Drive) is ticked then you are indicating the system has a method of "Air Speed Control" on either the supply or extract motors. When this is ticked the cost to operate the AHU will be reduced by 30% in the ACE Advanced report to reflect modulation / lower speed settings. *Note: How to add an AHU/HRU to an ACE project is available by clicking the following link, https://www.youtube.com/watch?v=n8X2injHZao*

Add Chilled Water Pumps

When completing the ACE Advanced Report, there is an option to add chilled water pumps into ACE, this only takes a minute to do and will add another asset sheet table into the ACE report. It is not mandatory to gather this information under TM44 methodology so you may choose not to fill this section out. Today, all this will do is generate an asset list in the ACE report as we have not yet linked chilled water pumps into any calculations, and presently you are not able to associate any operating costs or link them to recommendations.
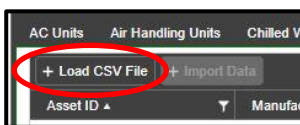
ACE Wizard Ltd, Suite A, 17B Somerset House, Hussar Court, Waterlooville, Hampshire, PO7 7SG

Import A/C Units:

Under the "Tools" tab you can download an empty asset list for excel. This can be used on mobile phones or tablets to enable the assessor to complete an asset list while on site, in some cases it may be quicker to complete the asset list during the site visit. See completed example spreadsheet:
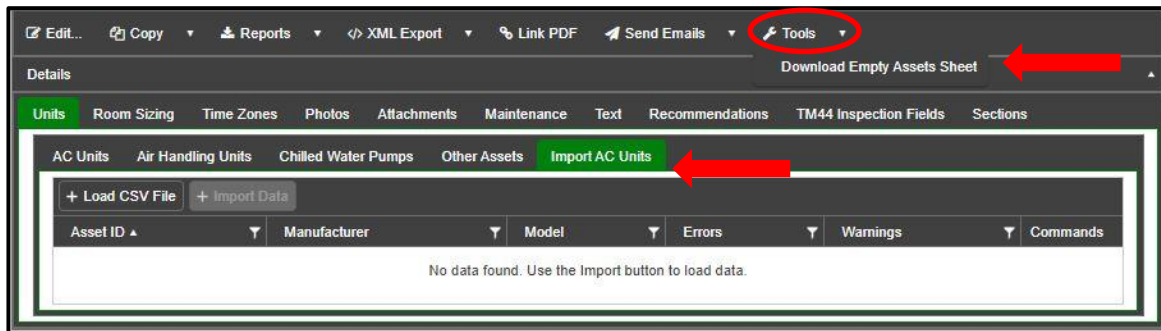
Once the excel asset list has been completed, save the asset list as a ".CSV" (CSV Comma Delimited) file on your computer. Next click "+ Load CSV File" in ACE under the Import AC Units tab. Select the file to upload from your PC, this will load the asset list and will display any errors or warnings you may have. From here you can edit the systems before importing into the project.

Note: Any errors within the asset list must be corrected before you can import these systems. Warnings do not have to be amended; however, it is recommended you double check these to ensure the data is correct. In the case below the refrigerant weights differ from the database figures.

Once you are happy with the asset list and any errors have been amended then click "+ Import Data" and this will populate the A/C Units asset list within ACE. It is worth noting that ACE will assign all the A/C units to the first comfort cooling time zone.

Room Sizing:

You should now move to "Room Sizing". Any rooms automatically created when adding AHU's, A/C or Chiller units will be visible within this tab and you now need to edit the room details, click on the "EDIT" button to get started.

Add the room size and the number of occupants and then choose your cooling load density.

Cooling Load Density – In the Ace Advanced Report, there is a table which shows the BSRIA guide listing standard Wm² for different areas, you should use these as a guide but change as required based on your observations on individual room / building heat gains or high occupant densities. ACE defaults all rooms to 110Wm² which is the most common across normal office spaces. This must be changed by the assessor manually as required. Please look at the BSRIA guide produced in the ACE Advanced Report to familiarise yourself with the rules of thumb Cooling Load Density. (For server rooms it is often thought that 400 - 600W m² is usually about right, although this obviously depends on the density of servers within the room.

Override Cooling Load kW - Use this field if the amount of cooling in a room is different to that shown in the field above (Total Area cooling kW). An example of this would be when you have linked a 5kw single split system to a room but there is also another 3kW supplied from a single internal unit linked to a VRV which mainly serves the adjacent office. You would then fill out the Override cooling load with a figure of 8kW. This would mean the sizing calculations would be based on 8kW rather than the 5kW.

Server / process: - Check this box if the systems in this room are process cooling. This will ensure that all systems in this room are based as process cooling and not included in the comfort cooling calculations in the report. This is a backup if you have forgotten to tick assign the unit to a Process Cooling Time Zone when adding the AC Unit.

Is Room Visible: - If you do not tick this box the room will not be included in the total cooling area calculations and will not display in the "Room Sizing" table (Table 7) in the ACE Advanced Energy Report or in the CLG Report. If you are not sizing a room and are using ACE just to capture the asset you may wish to leave the room as "not visible". We advise sizing all rooms when on site to capture the total comfort and process cooling on site. *Note: There is no need to size and tick "is visible" for areas where AHU's only serve, as there is no cooling associated with these areas. If ticked this can cause the calculations to be incorrect throughout the ACE and in all reports.*

Once all rooms have been sized, all totals are displayed on the top of page in the "Room Sizing" tab as shown in the next image. The assessor can override the "Total Cooled Area" calculated by ACE to accommodate any rooms not sized in the ACE System.

You can also expand the view of the "Room" via the expander triangle to see all AC, AHUs or other assets linked to the room. If required, the assessor can remove or add an asset to a room without the need to go back to the "Units" tab. *Note: An asset can only be added to a room if the asset is not already linked to a room.*

Maintenance Tab

Although very quick to complete, if you are not producing the ACE Advanced Air Conditioning Energy Report, you do not need to complete this section.

Do not forget this tab, simply tick the equipment the client has on site and state how often it is maintained and the condition it was in when you looked at it. Condition is graded between 1 - 4 with 1 being good and 4 being very poor.

Comments will be generated in the ACE Advanced Report in section 1.5 depending on what you select in this section. For example, if you select a 3 or 4 for any maintenance standard on any equipment, text will be automatically generated in section 1.5 which states *"As some of the inspected areas need attention then it may be necessary to consider increasing the frequency of the PPM."*

If you highlight that systems are maintained 12 monthly rather than 6 monthly, the following comment will be added into section 1.5.

"The information below highlights the installed equipment is not being maintained as regularly as recommended good practice guidelines. If filters or coils are found to be dusty/dirty in between service visits, then an increase in the frequency of maintenance should be considered".

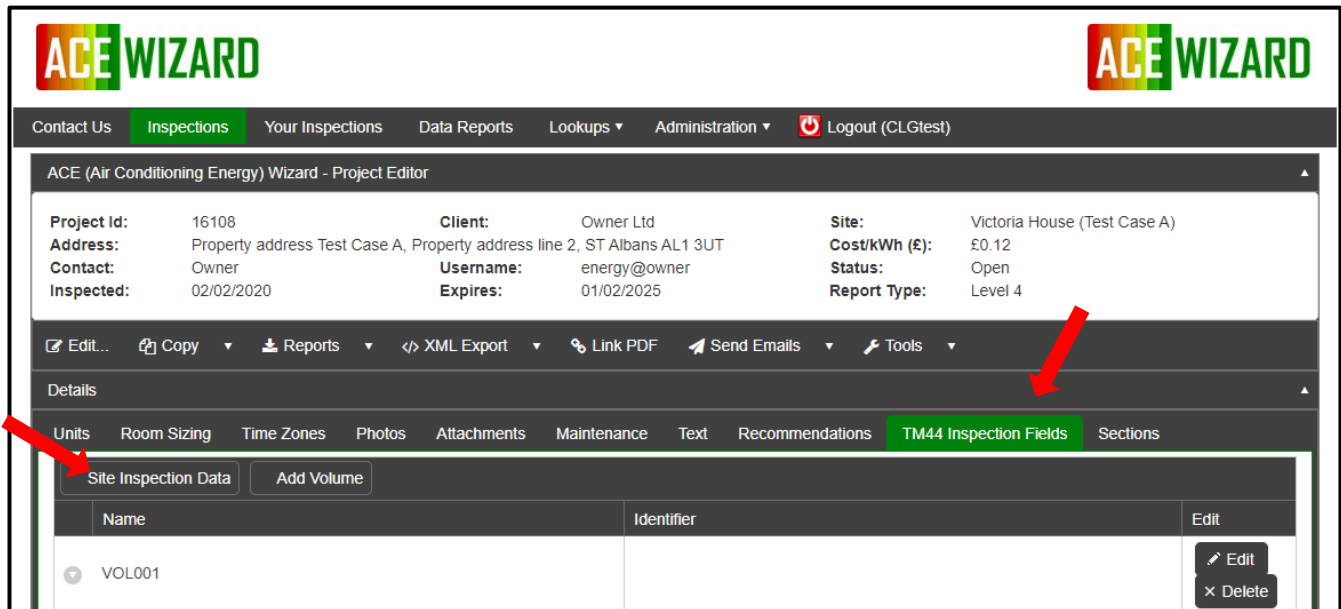**ACE Wizard Ltd, Suite A, 17B Somerset House, Hussar Court, Waterlooville, Hampshire, PO7 7SG**

Use the APPLY TO ALL check box if all systems are the same condition i.e. - standard 1.

TM44 Inspection Fields

Navigate to the "TM44 Inspection Fields" at the project level, by default, one Volume has already been created for you and it is easy to add more as and when required. Volumes and sub systems are only required on the sampled systems being inspected in line with the legislation.

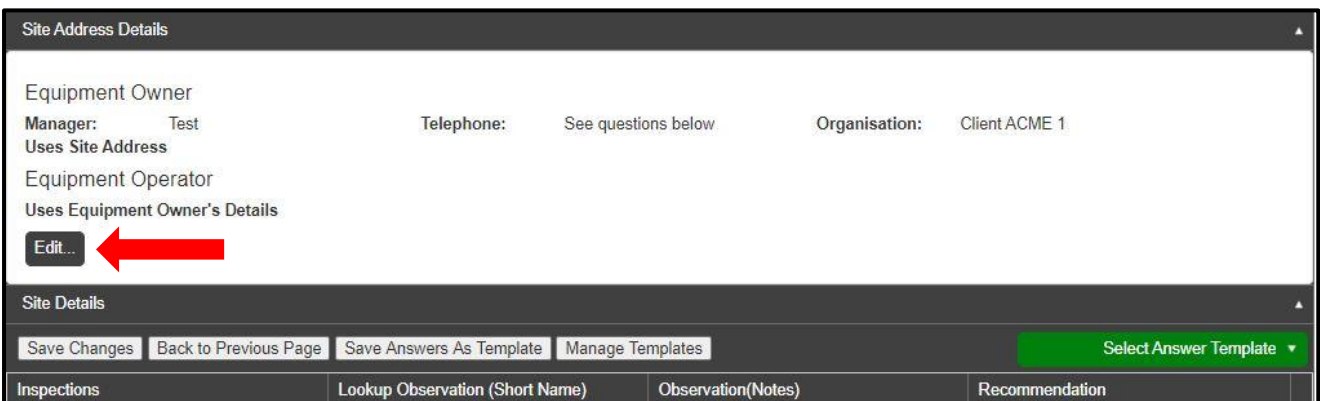Your first task is to answer the "Site Inspection Data" questions.

Site Inspection is split in to 2 sections.

> ➢ Site Address Details
> ➢ Site Details

Site Address Details

The default on all projects is to inherit the address properties captured at the creation of the project, this can be edited here by clicking the "Edit Button" and manually over written. In addition, ACE allows for an Equipment Owner Template to be created at this stage to be used across all portfolio projects where the equipment owner and/or operator will be the same on every report.
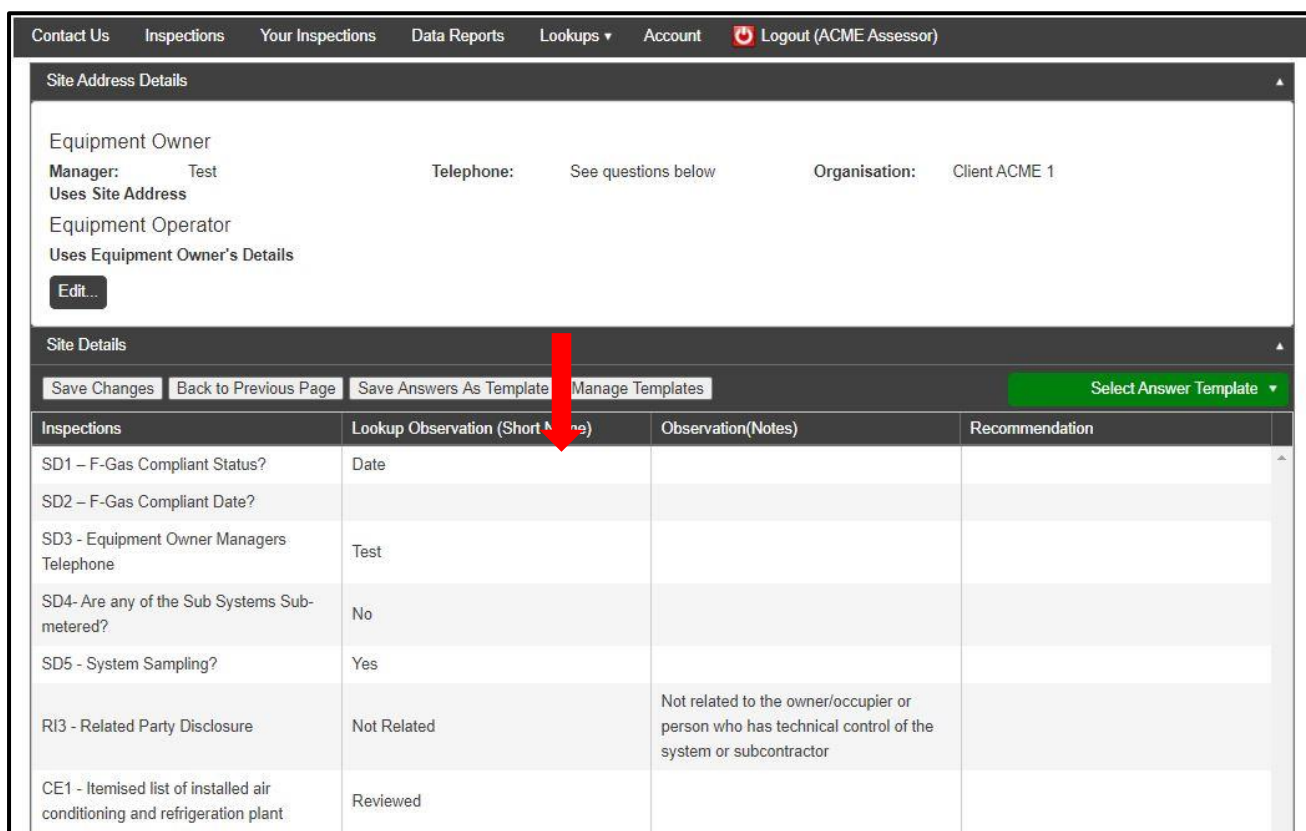

Note: No Site Templates can be selected unless a Template has already been saved, templates are linked to the Assessment Firm and are therefore available to be selected by all assessors associated to the Assessment Firm.

Templates can be created or updated using the "Save As Template" button, once you are happy with your changes click save to complete the edits to Site Address Details.

ACE Wizard Ltd, Suite A, 17B Somerset House, Hussar Court, Waterlooville, Hampshire, PO7 7SG

Site Details

Answer the Site Questions, as with the Site Address Details you have the option to select a template to import a set series of answers to the questions for that client. There are currently 32 questions asked at the site level some of these apply to the Sub System inspection questions where answers are likely to be the same across all sub systems.

All site detail answers have been pre-set to the most common, simply click in the "Lookup Observations" box to see the alternative answers and select accordingly. On selection, the "Observation (Notes)" and "Recommendation" notes may change based on the answer selected in the Lookup Observation column. If you wish to change any of the text in the "Observation (Notes)" and "Recommendation" boxes, simply click in the field and replace the text with your own.


Note: To learn more about using and managing the Inspection Field templates in ACE, two short training videos have been created at https://www.youtube.com/watch?v=mHTGmgswM9k and https://www.youtube.com/watch?v=OyisbgUBwkQ

Creating Sub Systems and Sub system inspection fields

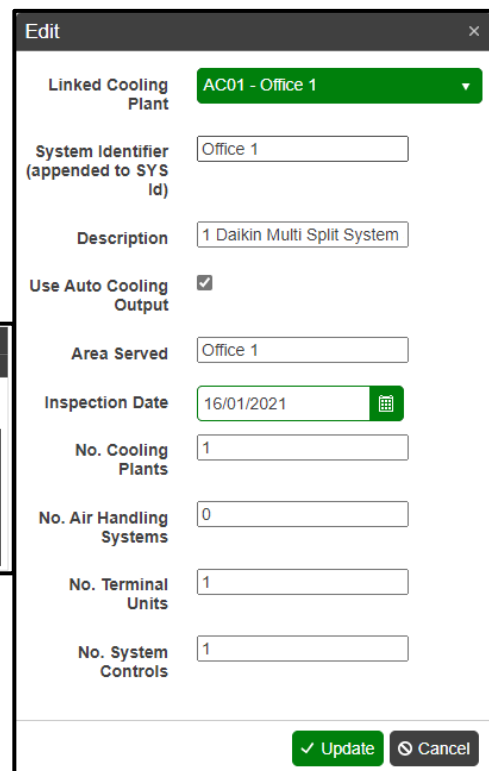Click the Expander Triangle next to the VOL and click "Add Sub System"

The menu below will pop up and you can now select the cooling plant being sampled from a drop-down list of all systems you have added to the project.
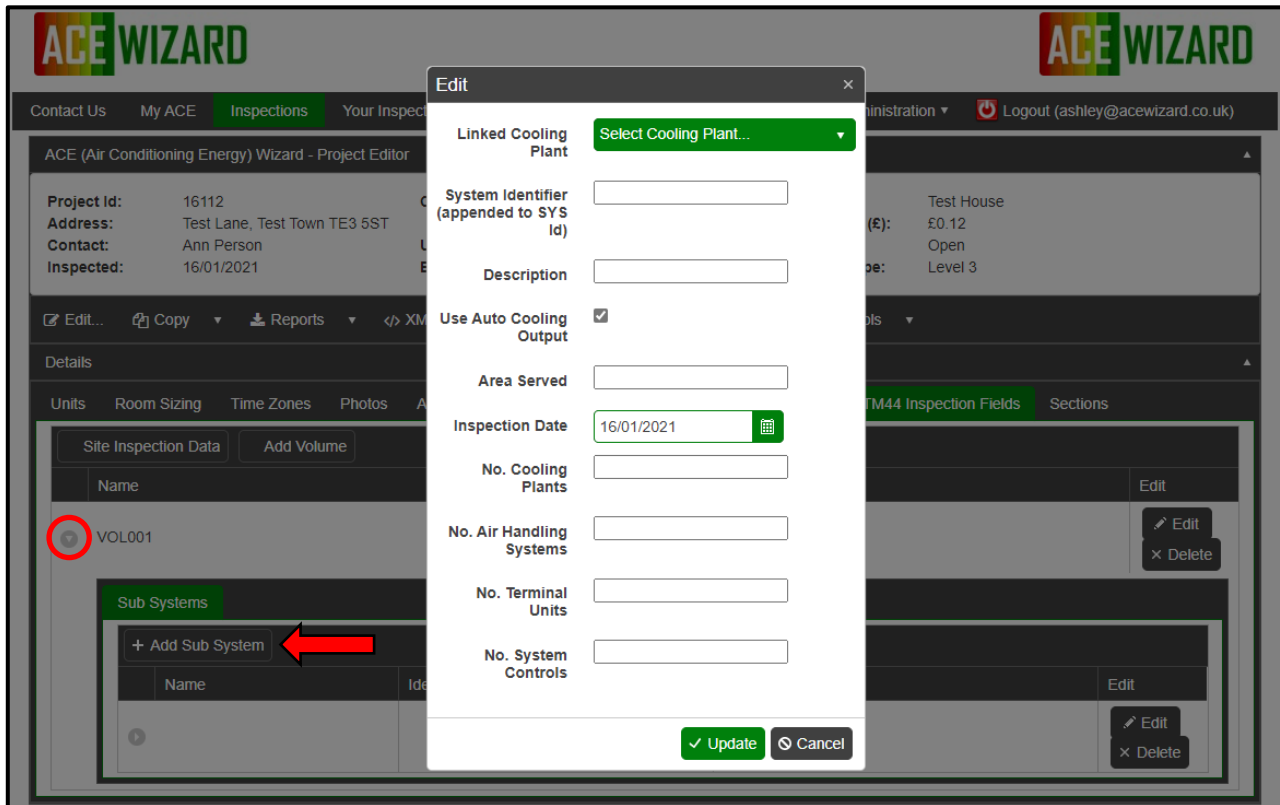
The System Identifier will be auto populated based on the data already captured in the project. You can edit the "System identifier", "System description", you **must** also record the number of Cooling Plants, Air Handling Systems, Terminal Units and System Controls linked to the Sub System. The Inspection date will show the date entered when creating the project, you can change this date if required. Once the required changes have been made, click "Update". The naming changes will be seen on the main screen once you click update.
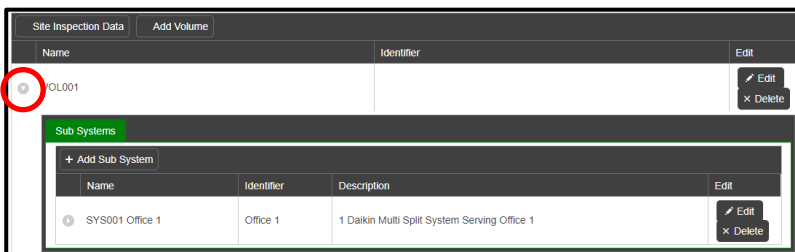
Using the Expander Triangle at Sub System level will open the view out to show the Cooling Plants, Air Handling Systems, Terminal Units and System Controls. Expand each section as shown in the below image. You can now click the "Add new record" button for the appropriate number of linked units of Cooling Plants, Air Handling Units, Terminal Units & System Controls as required for the Sub System.

ACE Wizard Ltd, Suite A, 17B Somerset House, Hussar Court, Waterlooville, Hampshire, PO7 7SG

The next image shows how the view may look with one record added to each sub-category. Repeat the exercise as many times as required. *Note: only record systems which have been sampled.*

The next step is to complete the inspection fields at the Sub System level for each linked unit.

Click on the "CP Inspection" button to open the Cooling Plant inspection fields.

POWERED BY
ACE WIZARD
SOFTWARE FOR ENERGY ASSESSMENTS!

The Cooling Plant inspection questions operate in the same way as the site data questions, the most common answers are pre-set with the associated notes. You can now begin to review the default answers available in the Lookup Observation (Short Name) column. Remember the Observation (Notes) and Recommendations text will change based on the answer selected in the Lookup column.

There are currently a total of 34 questions in the Cooling Plant Inspection fields to be answered. Once you have completed an inspection record for a site, the answers can be reused on the next Inspection record of the same type using the "Pre-fill inspection from".

Some of the observation notes and recommendations are pre-filled based on the data input at the asset list stage and Site Detail level you will have already completed. To edit this, untick "Use Site Answer" as circled, click into the box and edit the text as required.

It is possible to add a recommendation

straight from the inspection fields by clicking "Add Rec" button located in the far-right column. This will bring up a window with the most relevant recommendation associated with the selected observation. You can edit the

recommendation text as required.

Note: You cannot edit the rec after clicking update from here, clicking the same "Add Rec" will create a new rec in the project. To edit after clicking update, you must exit this page and go to the main recommendations tab.

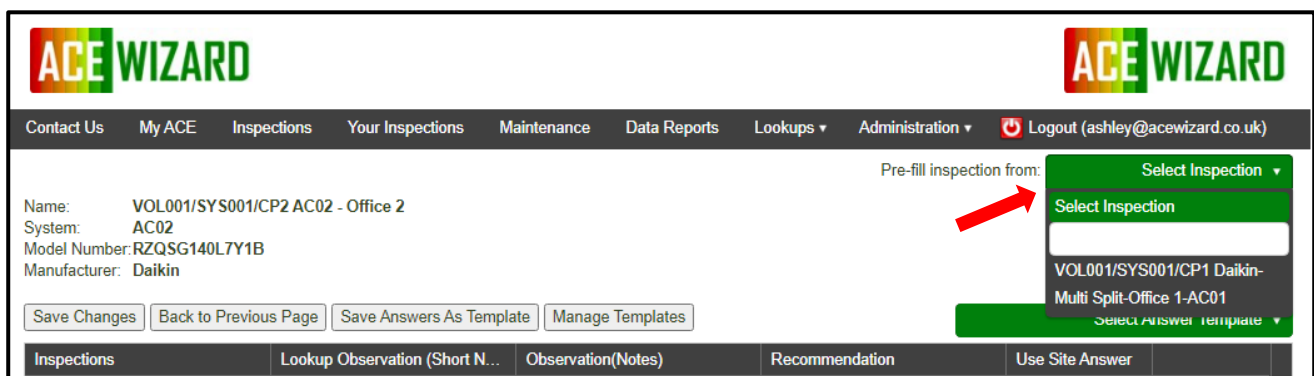Once you have added the recommendation the text; "Rec Added" will appear next to the field you added.

ACE Wizard Ltd, Suite A, 17B Somerset House, Hussar Court, Waterlooville, Hampshire, PO7 7SG

ACE WIZARD
MOVING THE BOUNDARIES OF AIR CONDITIONING ENERGY ASSESSMENTS!

You can save your answers as a template for use on another project by clicking the "Save answers as template" button. Depending on your access level you will be able to save the template for your own use or as a template which can be used by all assessors linked to the assessment firm.

Once you have saved a template, the option to select a template becomes visible along with the ability to manage the templates for Site, Cooling Plants, AHUs, Terminal Units and System Controls. To learn more about using and managing templates go to https://www.youtube.com/watch?v=mHTGmgswM9k and https://www.youtube.com/watch?v=OyisbgUBwkQ

Now complete the Inspection Fields for Air Handling Units, Terminal Units & System Controls for each system linked to the Sub System.

To save time completing the inspection fields, when completing the Inspection form for all subsequent systems being sampled on the project, as well as selected a saved templated you will also have the option to prefill the Inspection form from a system already inspected on the project. *Note: This field will not be shown until one system has been sampled.*

Photographs

If you are not producing the ACE Advanced Air Conditioning Energy Report, you do not need to complete this section. *Note: We would recommend uploading the site photos to ACE to help retain information in case the project is selected to be audited by your accreditation scheme.*

By default, a project will show the Assessment Firm company logo on the project, this is added to each project on creation and is used in the ACE Advanced Energy Report.

To add photos, click "Upload Photos". ACE allows you to upload multiple images in a batch, the image will automatically be compressed to an appropriate size for the report.

Once the upload is complete you will need click into the "Caption" box next to each picture to name a picture and set the Photo Type which determines where the image will be used in the PDF:

Front Page – will add the picture to the 1st page of the ACE Advanced Energy report.

Logo – uses the image as the Assessment Firm company logo.

Picture List – groups up to 8 pictures per page within the photograph section of the ACE Advanced Energy report

Note: All pictures will default to "Picture List" when uploaded.

To re-arrange the photos simply click and drag the photo to the position and order them how you wish them to be displayed within the PDF document. Once happy with the photos ensure to click "Save Changes" before continuing.
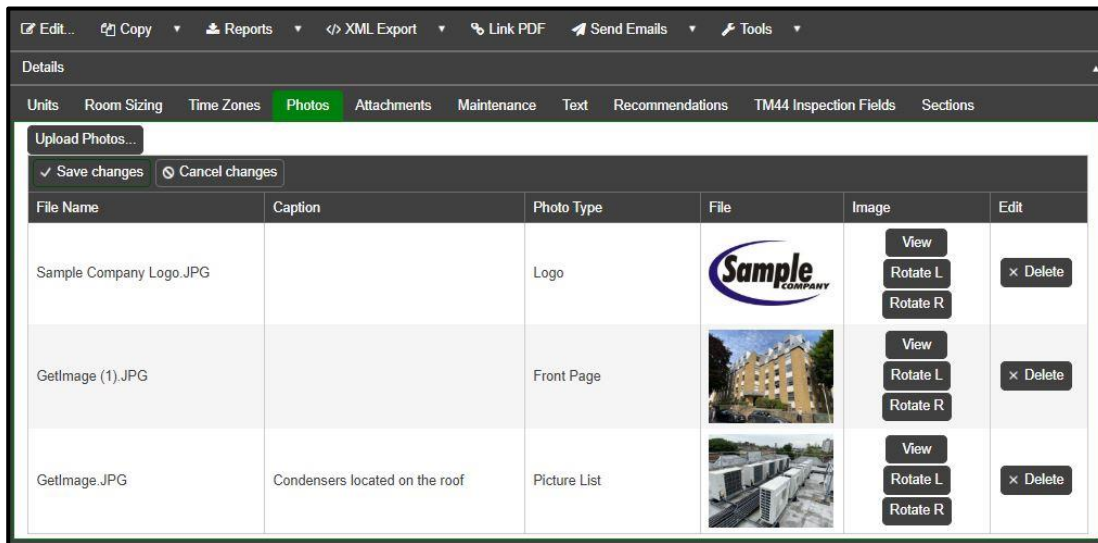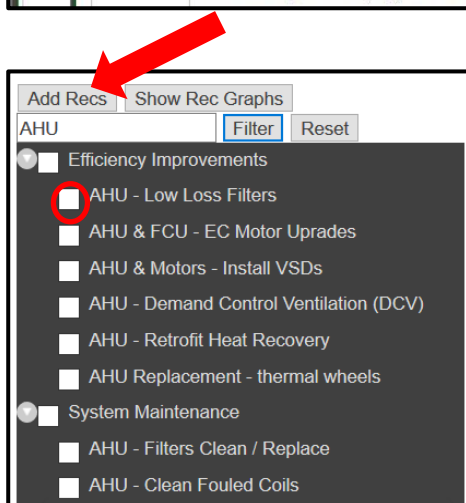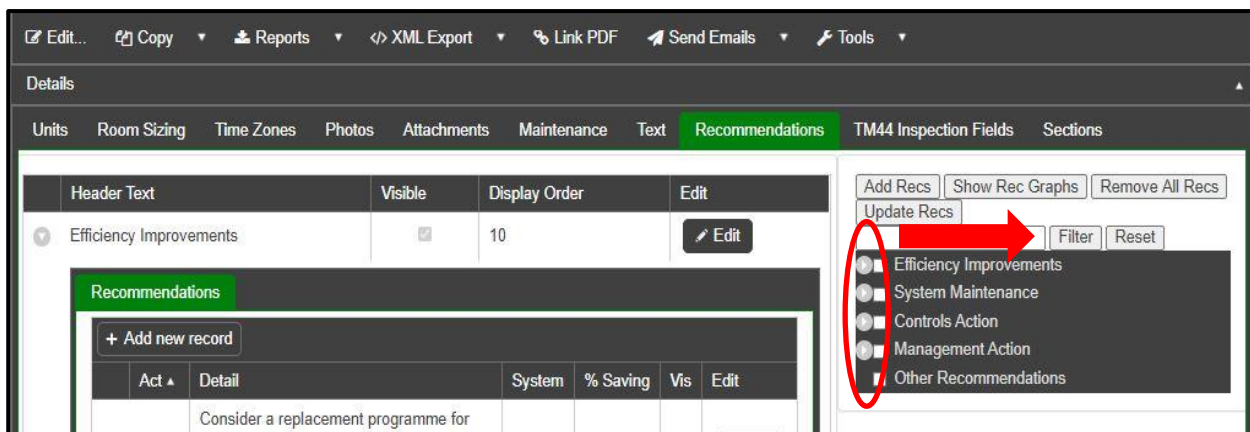

Recommendations

One of the main differences of ACE Wizard is how the system handles and presents recommendations. It not only enables the assessor to quickly select appropriate recommendations, but by using the data already in ACE, it calculates the potential savings a client might achieve by adopting the report's findings. It helps justify the very principle of commissioning a TM44 Air Conditioning Inspection.

There are over 200 Recommendations in the ACE Rec's library. By clicking the Expander Triangles, it will show all recs listed under each section. However, using the filter box will allow to search for text which is contained in the recommendation's title or popup description box. For example, typing "AHU" in the box and clicking "Filter" will automatically expand the sections with recommendations containing the word "AHU".

By hovering over a recommendation, a pop-up box will appear giving the assessor more information on the detail of the recommendation. To select a recommendation, tick in the clear box next to the rec and then click "Add Recs".

The selected recommendation will appear on the left-hand side of the screen and you can go into each recommendation to edit them by clicking the "Edit" button.
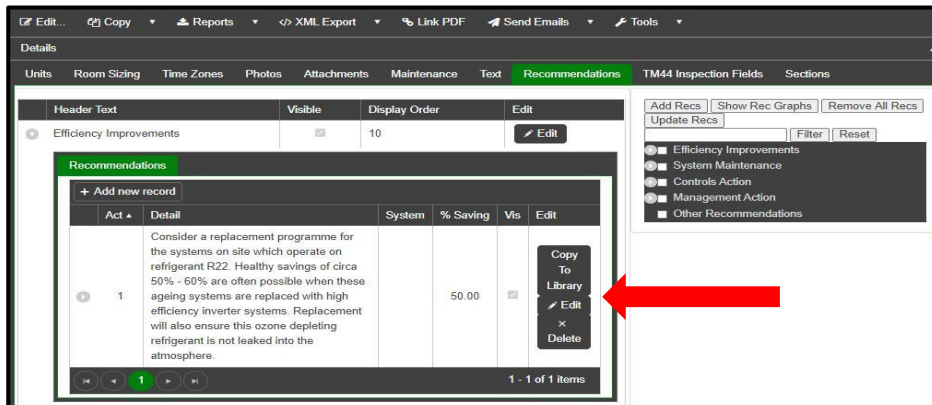
At this stage, you can personalise the recommendation to make it system specific or site specific. To do this, change the wording in the details section of the edit screen (see next image). It is the wording in the **"Detail"** that is transferred over into the CLG Report and

displays in the ACE Advanced Energy report.

You will notice when you are editing a recommendation, as well as the "**Details**" section there is also a **"Comment"** box. The comment box is not compulsory for a CLG report; the **"Comment"** text shows for recommendations only shows on the ACE Web view of the project and on the recommendations Data Reports. It provides extra energy and supporting information for the client relating to the recommendation, the comments have been set up to be as generic as possible so they usually do not require changing, however you should have a quick glance across it, particularly if you have changed the wording on the recommendation "Detail", just to ensure the comment is relevant. You can delete the comment altogether if you wish.
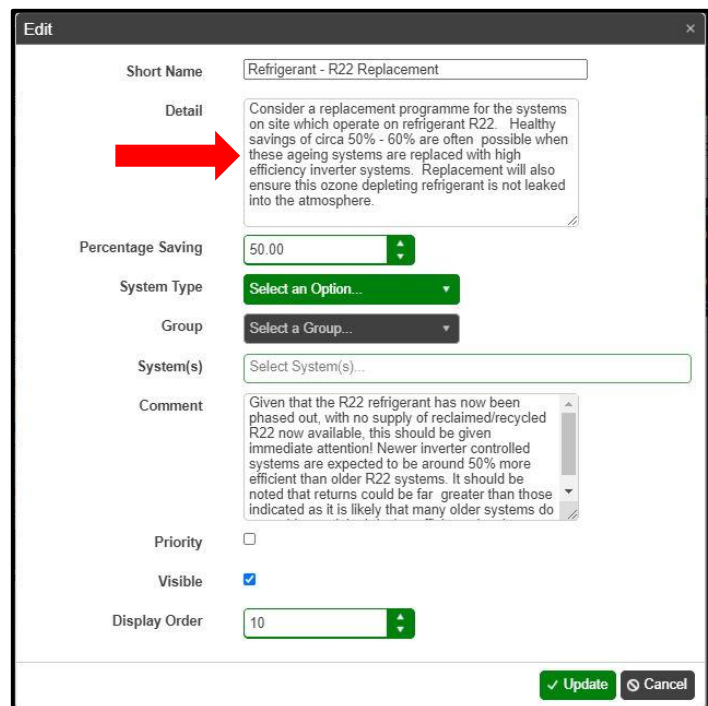
Short Name – No need to edit this field.

Percentage Saving – Most recs are prefilled with a percentage saving which has been based on industry expectations. These can be adjusted as the assessor sees fit based on the site assessment. For example, if PIR sensors are installed to a building with only 1 small meeting room, they may only save 1 or 2 percent, however if the building has many meeting rooms that are rarely used and you feel they leave systems on when the rooms are vacant, then you may save 50% or even more.

System Type – Whilst editing a recommendation you need to link the rec to a "system type" and then to a "Group", once you have selected a group, you can then apply the rec to single or multiple items within the group. This will then allow ACE to make the relevant calculations. The system types and available groupings are based on the data you have already entered in the project, the following "System Types" exist. *Note: If completing a CLG report the System Type & Group can be set to N/A*

System - Allows you to select:
 - All Systems - (To use if a rec is appropriate to all AC systems such as sub-metering)
 - By a specific group of common inefficient systems such as - All fixed speed systems.
 - Any individual system in the asset list (multiple systems can be selected)

Time zones - You can link a rec to any of the time zones you have created. For example, you may want to recommend they increase the server room temperatures and link it to "process systems" time zone. Or you may want to recommend they raise the set points in the offices and link it to "Comfort Cooling" time zone.

Unknown – This may be used where savings could be made against a system other than the cooling plant, for instance if you were to recommend installing a form of heat recovery this would reduce boiler run time as heating systems do not form a part of the report you may wish to put a saving set to unknown.

Area - You can also select on each of the rooms in the building, so if you want to recommend that they harmonise set points in the open plan office it will calculate the savings based on the operation of all the systems linked to the open plan office.

AHU – This allows you to select all AHUs, specific AHU(s) or all AHUs without VSDs.

Refrigerant – This will allow you to group a recommendation to any refrigerants the systems have installed on this site.

Manufacturers – Enables you to calculate the recommendation based on a one or multiple manufacturers specific to the site.

System Type – Such as Split, Multi Split, VFVs, AHU etc.

Time Zone Type – You can link a rec to all comfort cooling systems, all process systems, or all mechanical ventilation systems. This is particularly useful if multiple time zones have been created.

Condition – Good, Poor, Ageing etc.

Visible – Visible should be ticked by default, removing the tick will hide the recommendation from the report.

Priority – This should be ticked where any significant recommendations have been made and need to be highlighted to the client.

Note: You can see a training video on how to use recommendations by clicking on the following link.
https://www.youtube.com/watch?v=zvqy-iJLdPM

If you are not producing the ACE Advanced Air Conditioning Energy Report, you can simply link the recommendation to N/A.

Once you have completed all recommendations, click "Update Recs" to apply the changes to the project. This will ensure the recommendations display the energy and cost saving values (Note: Times Zones must be completed for this to work) show on the ACE Advanced Energy Report. *Tip: Click the "Show Rec Graphs" button to quickly give a visual view of the energy & cost savings*
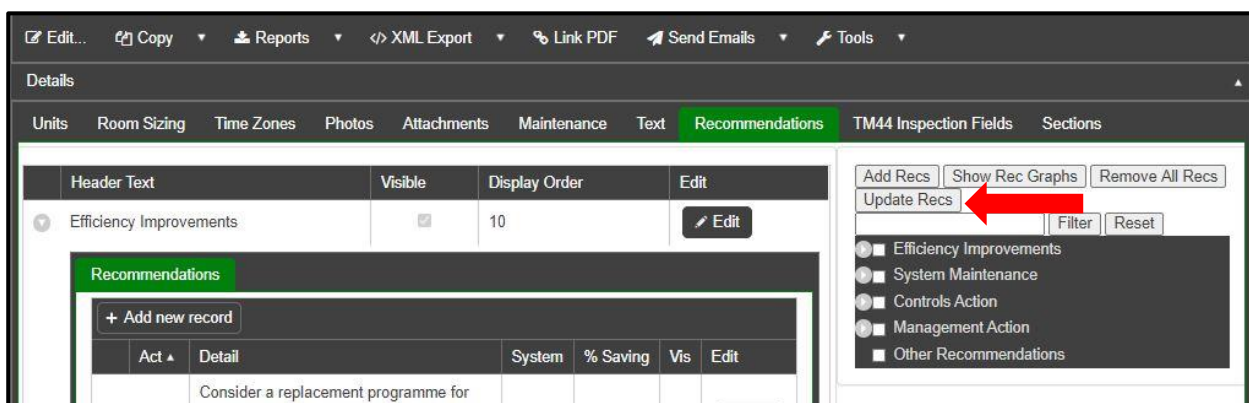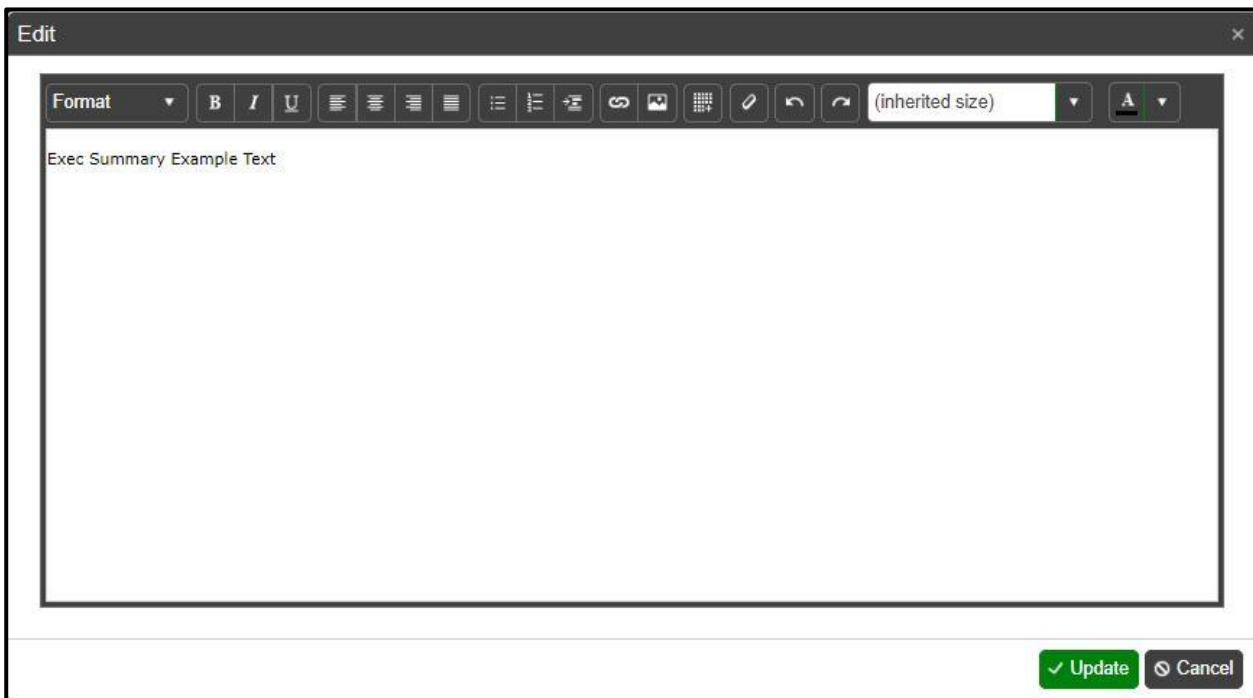
Executive Summary

Once you have filled in all the ACE project information you can then begin to write your executive summary and summary of findings. ACE builds several key paragraphs using data already captured in the ACE project to help reduce the time taken to compile a detailed executive summary, we refer to it as "Generated Text". But first we will look at how to simply create an Executive Summary in the ACE system.

From the "Text" tab, click edit to paste your text into ACE, we can provide a Word template on request which uses tested fonts and formatting which can be copied easily into ACE Wizard.
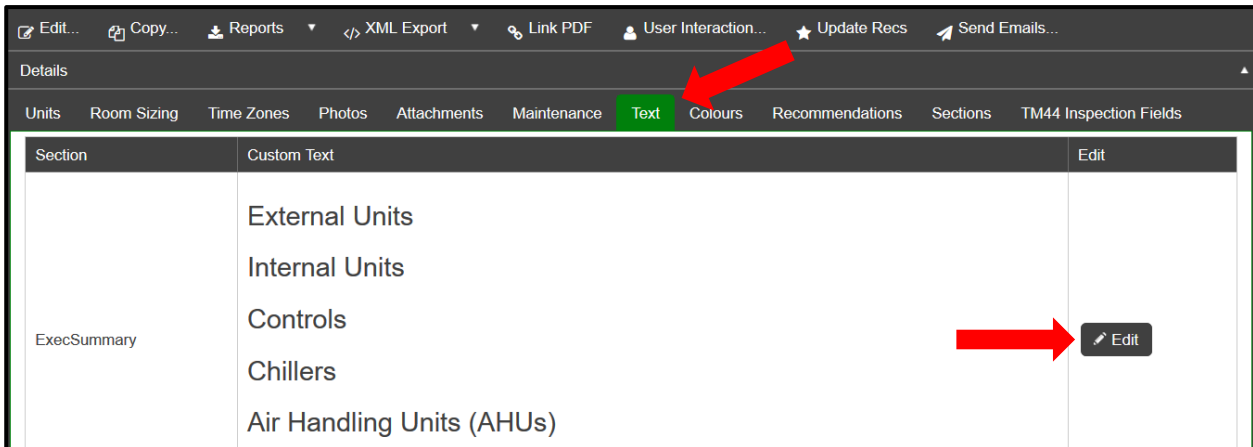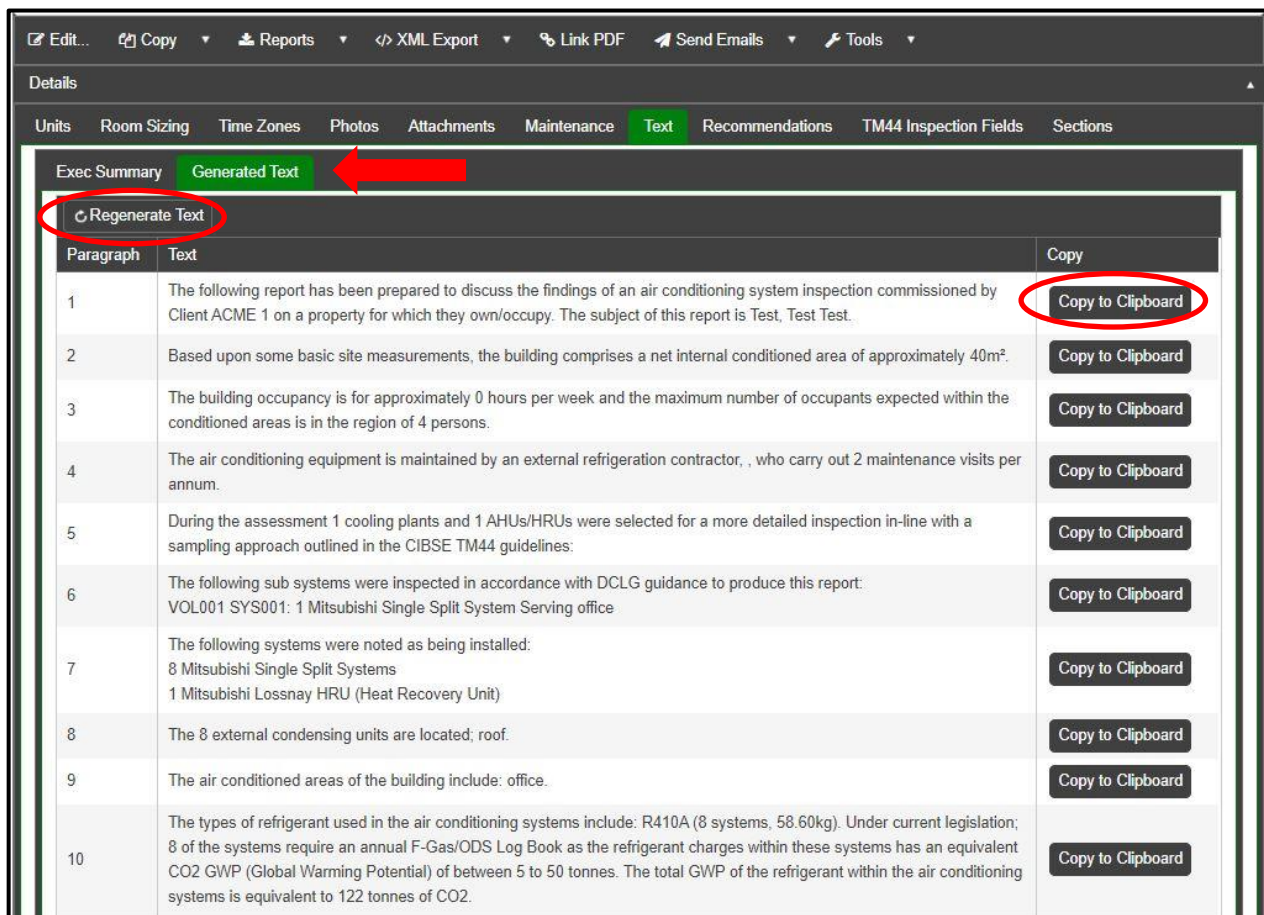
Within the edit tab there are multiple editing tools available across the top of the window. Once finished make sure to click "Update".

Some assessors use Microsoft Word to hold a "Template for an Executive Summary, changing key details specific to the site before pasting the text from the Word document into the approved software application. Whilst ACE tries to honour Microsoft Word formatting parameters, these can sometimes be difficult to handle particularly when a Word Document may have been built up from multiple sources. To minimise this a Word template can be provided which using formats which minimise any formatting issues when copying and pasting text from Word into ACE.

Generated Text

As you go through and input data into the ACE system, ACE is able to use this information to generate key preconfigured paragraphs which can be used as the core content of the executive summary. You can find these under the "Text" tab and by clicking on "Generated Text".

To copy the text simply click "Copy to Clipboard" and paste into your Word template or directly into ACE.

Tip: It may be useful to create an exec summary template in Word with paragraph markers for the generated text.

We strongly advise each paragraph is checked before copying and pasting into your exec summary, the information is only as accurate as the data entered into ACE. This can be a good way to double check that the data has been entered correctly. ***Important Note:*** *If any amendments are made in ACE after initially generating the paragraphs, you must click "Regenerate Text". This will ensure the paragraphs are updated with the new information.*

Sections

ACE has 3 pre-configured PDF report type documents available for creation from a project, these include:

➢ ACE Advanced Air Conditioning Energy Report
➢ Draft CLG Report
➢ Draft CLG Certificate

In most cases these 3 PDF documents will meet an assessor and their client's needs. ACE also allows assessors to change which sections will be generated in the ACE Advanced Energy Report. These sections are set "Visible" by default in all projects and can be switched on or off on an individual basis.

The system inspection questions which are often difficult for the end client to understand and gain measurable value from are by default set to not be shown in the ACE Advanced Report PDF. These can be included in the advanced report from the "Sections" tab by marking "Section 4 TM44 Additional Inspection Information and Sampled Systems" to "Visible" and click "Save Changes". With this ticked, when the ACE Advanced Report PDF is generated it will include the full system inspection field data.

Note: All sections will always display in the live web view of the report

CLG Project Validation

ACE provides a validation process to ensure the data entered by the assessor in the project will generate an approved CLG Certificate & CLG Report once lodged through the assessor's accreditation scheme. To run the validation process, click the "Validation" button as shown below.

ACE Wizard Ltd, Suite A, 17B Somerset House, Hussar Court, Waterlooville, Hampshire, PO7 7SG

ACE will provide notification if no errors are found or (as shown in the image on the right) if errors are found. To view the validation errors, click the "View Errors in new Window" button.
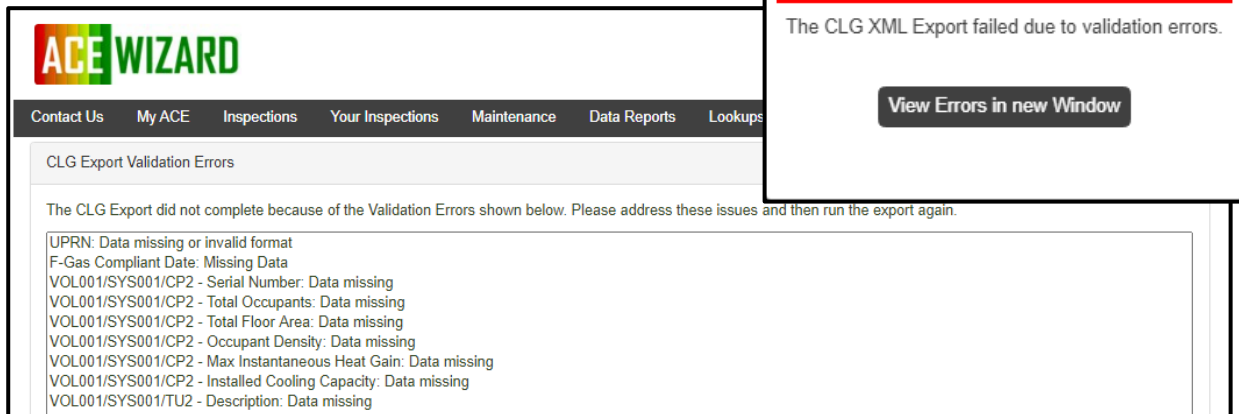
Once all the validation errors have been resolved, you are now ready to generate the ACE Advanced Energy Report and/or Draft CLG Certificate and/or Draft CLG Report. If you are going to lodge without issuing the documents in "Draft for client or peer review, to generate the CLG XML Export as described in section Creating the CLG XML File ready for lodgement..

## Generating & Viewing ACE Documents

ACE can generate the following files which can all be linked automatically or uploaded to the ACE Project and shown in the "Attachment" tab,

- ➢ ACE Advanced Air Conditioning Energy Report PDF
- ➢ ACE Advanced Air Conditioning Energy Report Word
- ➢ Draft CLG Report PDF
- ➢ Draft CLG Certificate PDF
- ➢ CLG XML File
- ➢ Sterling eVolve XML File.

To generate the ACE Advanced Energy Report PDF, the CLG Draft Certificate PDF, or the CLG Draft Report PDF and automatically attach the document to the project ready for your client to review prior to lodgement, click on the "Link PDF" tab shown below.
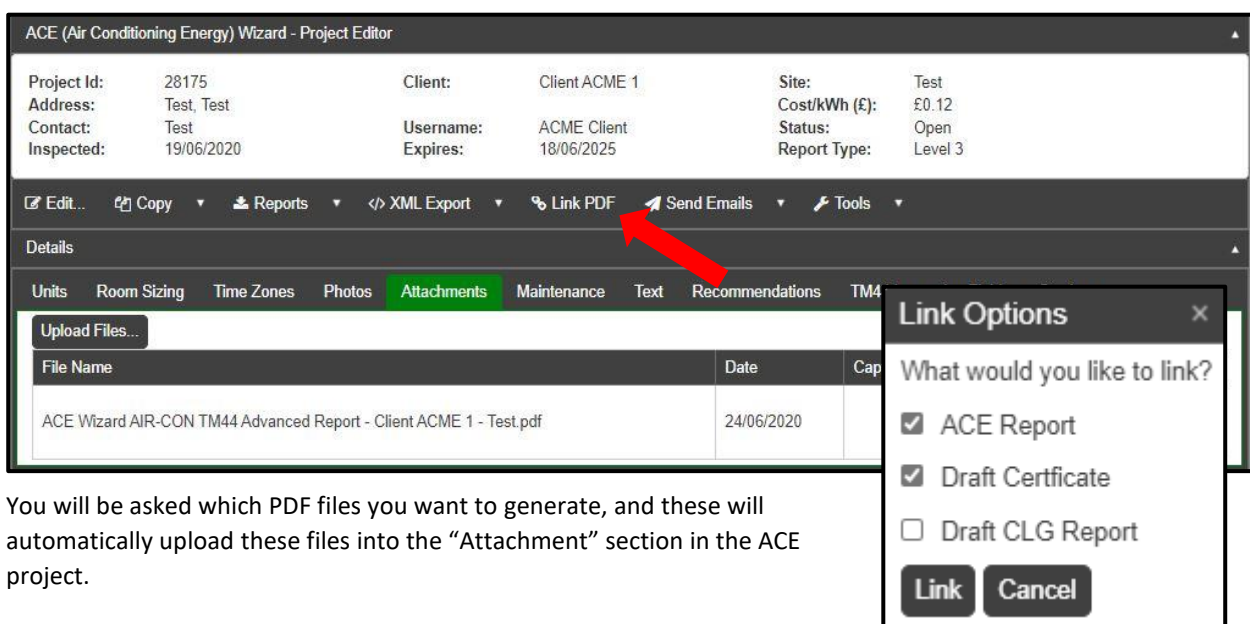
You will be asked which PDF files you want to generate, and these will automatically upload these files into the "Attachment" section in the ACE project.

ACE Wizard Ltd, Suite A, 17B Somerset House, Hussar Court, Waterlooville, Hampshire, PO7 7SG

When your "Link PDF" or attach a document to a project, ACE will ask if you would like to change the project status from "Open" to "Draft" or Draft to Closed". Projects that have an "Open" status will not be seen by the end client. *Note: Once "Closed" a project cannot be moved back to draft or open without contacting ACE support support@acewizard.co.uk. Any updates to a "Closed" project will not be seen by the client without contacting ACE Wizard Support Team.*

To "View the ACE Advanced Report or to create the documents individually without automatically attaching the document to the project, select one of the options from the "Report" menu.

The "View Report" is a live view of all the data in the project and will open the ACE Advanced Report, The Draft CLG Certificate and the Draft CLG Report in a new browser window with each section in its own tab enabling the assessor to quickly review all aspects of the report.

Creating the CLG XML File ready for lodgement.

To create the CLG XML file to upload to the Accreditation Scheme, click on the "XML Export" menu and select the "Link CLG XML Export to Project".

The validation process will run automatically with any errors showing as described earlier. If no errors are found the CLG XML File will be automatically added to the project and can be found "Attachment" tab.

The file will be automatically named and can be downloaded to your local PC by clicking the "Open" button.

To lodge the report, go to your accreditation scheme lodgement portal. Once you are signed in, select your correct profile and upload the Project XML file generated by ACE.

In a small number of cases, the XML file will be rejected by the CLG, the known reasons this could happen are:

➢ RRN numbers already in use – Please regenerate the XML file in ACE, new RRN numbers will be allocated to the project ready for submission again.

➢ Assessor details do not match those stored with the accreditation scheme – Please update your assessor details in ACE to match those with the accreditation scheme and regenerate the XML file.

> ➢ Insurance details do not match those stored with the accreditation scheme or are out of date – Please update your assessor details in ACE to match those with the accreditation scheme and regenerate the XML file.

Once the official certificate and report appear on the register, the printed PDF versions of these documents can be added to the ACE project for your client to access as described in the "Attachments" section below. *Note: ACE will add a link to the Attachment page which will open the CLG Certificate & CLG Report, these links will only work once the XML is lodged. It should be noted the link will only work while the CLG maintain the existing naming conventions for the document URLs.*

Creating the eVolve XML File ready for lodgement.

Assessors who are accredited through Sterling Accreditation Ltd have 2 additional ways to lodge a report as ACE integrates directly with the Sterling eVolve software package. The 2 options are:
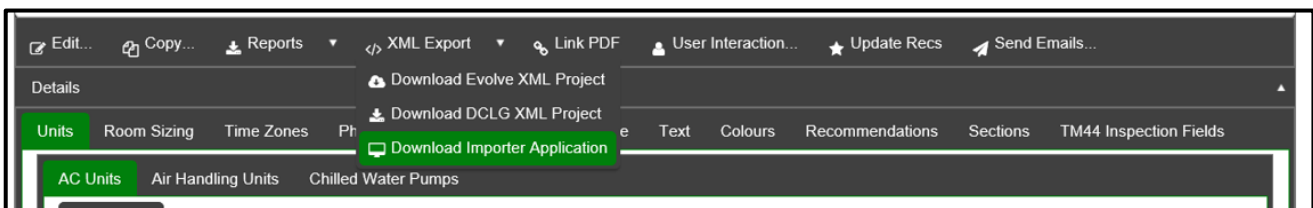
1. Download Importer Application
2. Download Evolve XML Project

Download Importer Application

This is the most common way, by selecting this option you will be directed to a setup page. If this is the first time, please click Install and follow the on-screen instructions. *Note: Windows may ask you to confirm you trust the source before running*. Once installation is complete the programme will run automatically.
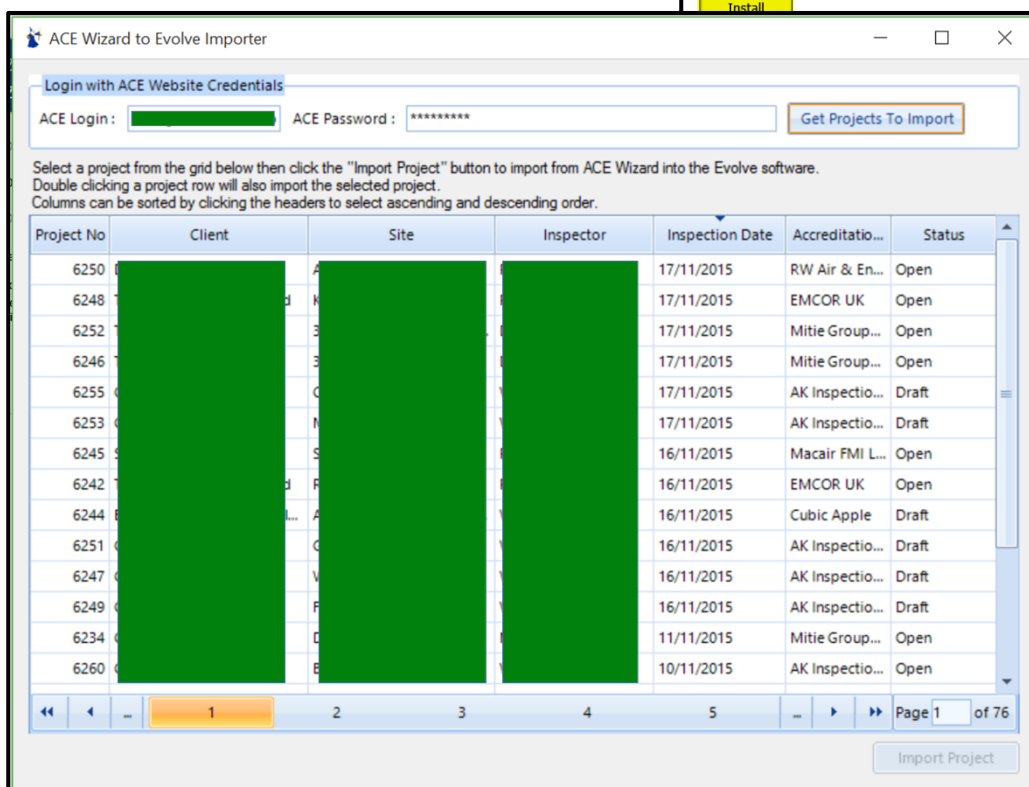
If you have already downloaded the application previously click launch to run the application.

The importer application will be now visible as an icon on your task bar.

Enter your ACE Wizard username and password and click "Get Projects to Import" to retrieve your projects. *Note: the projects displayed*

will correspond to your access rights in ACE Wizard.

Have Evolve open, select the project you want to import in to Evolve.

The project is now ready for you to review in Evolve in the normal manner.

Download Evolve XML Project

If the importer is not able to run because of a company's security permissions or for any other reason, you have the option to download the ACE Wizard project as an XML file which can be imported manually in to Evolve as follows.

When the download completes, copy the Project.xml file to the appropriate directory in your local Documents\Sterling Evolve folder and name it Project.xml.

Note: Before copying ensure the Evolve software is not running and that all projects are closed and the software displays the Project Manager Window.

Attachments

To add documents to an ACE project, navigate to the "Attachment" tab and select "Upload Files".
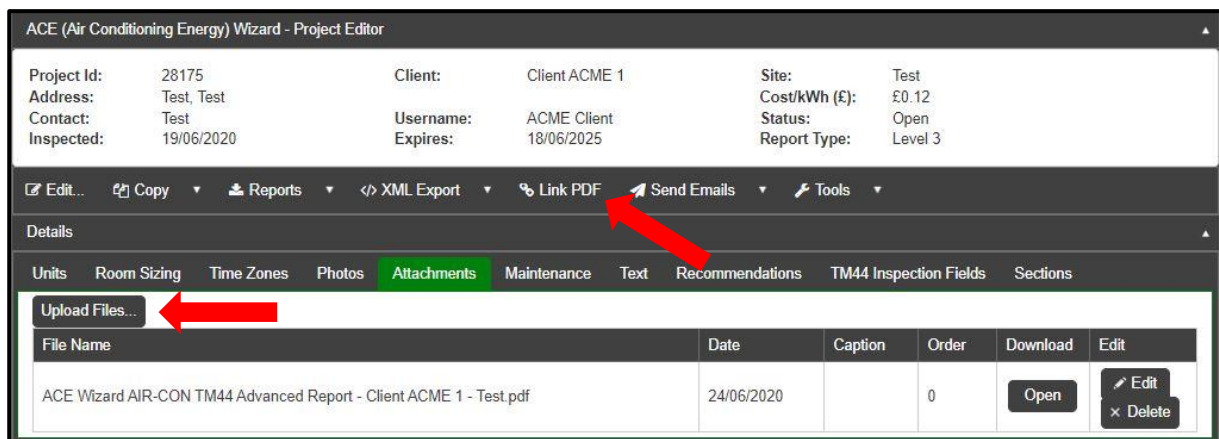
Select the files from your local PC/Network you wish to attach to the project and once all the files reach 100%, click "Save".

Once uploaded you will be able to edit the file name, add a caption and change the order the file displays in the table.

Note: Only PDF files will display to the client through the ACE system, other file types, such as word documents (.DOCX), can only be seen and accessed by the Assessor, Assessment Firm, Accreditation Scheme and Auditor.
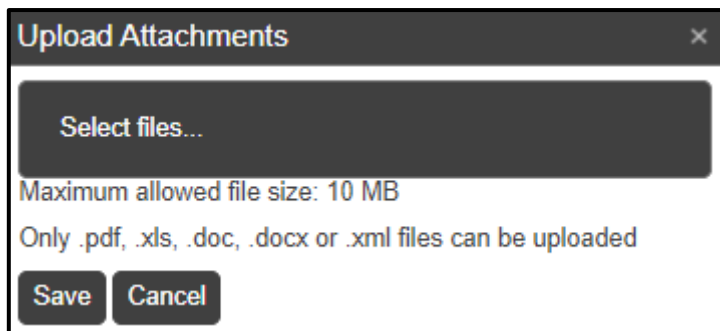
As with the "Link PDF" process, when you upload a file to the project, ACE will ask if you would like to move the project from "Open" to "Draft" or Draft to Closed". Projects that have an "Open" status will not be seen by the end client. *Note: Once "Closed" a project cannot be moved back to draft or open without contacting ACE support support@acewizard.co.uk. Any updates to a "Closed" project will not be seen by the client without contacting ACE Wizard Support Team.* Once uploaded to the project, delete any draft documents, and change the project status via the "Edit" button for the project to closed.

To understand how to send access notifications out to your client please go to the Giving Client Access section further on in this document.

The following screen shows the "Client" view for the company "Owner Ltd" who have 3 reports for 3 separate buildings which have been inspected by "BRE Assessor" for "Tester" Assessment Firm for them. The client can click the "Recommendations & Report PDFs" button or toggle the "Expander Triangle".

The user can navigate to each of the tabs as well as run "Data Reports" full date from all the projects linked to their account (3 in this example). These Data Reports can also be extracted into EXCEL and include the following preconfigured database reports.

- ➢ Asset List
- ➢ Reports by Expiry Date
- ➢ F-Gas & Refrigerant Data
- ➢ System Energy Efficiency Rating
- ➢ Recommendations (Energy and cost saving data will only display if the ACE Advanced Energy report has been completed)
- ➢ AHU Data
- ➢ Areas & System Sizing
- ➢ Operational Cost (Energy and cost saving data will only display if the ACE Advanced Energy report has been completed)
- ➢ Key findings Report.

Giving Client Access

All projects created in ACE are automatically created with "End Client" access to review the project in predominantly a read only format. *Note: The End Client cannot edit an assessor's project*. Access to a project or a group of projects is based around the "Client" name which is more commonly referred to by TM44 assessors as the "Equipment Owner/Operator Company Name". This name is set when the project is created *Tip: To Edit a Client Name, do not change the "Client Name" in the Project", Edit the Client name from the "Lookup" menu, "Edit Assessment Firm, Click Expander arrow an "Client" tab as shown in the Managing your Account & Profiles in ACE section* . The client access will show all projects which have been created for the "Client" carried out by the Assessment Company (Tester in this example), who carried out the assessments.

To send the End Client access to ACE, click "Open" to enter the project.

Go to the "Send Email" menu and select either the "Draft" or "Completed" email from the dropdown option.

These emails contain instructions on how to access ACE and how to review and download their reports.

If the "Client" has never logged in to ACE before, the Client Email Address will be blank. To send to the end user, fill in their email address here, if the address is not known send the email to yourself. Once the End User has logged in,

the assessor will no longer be able to add an email address into this field. This is to prevent the End User's Password being exposed to the assessor as it will have been changed by the End User when they first log in to ACE.

All text contained in the email relates to the project and the assessment firm the project was created under. The above image shows the "Draft" email. The text below shows the "Completed" email.

REF - Owner Ltd - Victoria House (Test Case A)

Your recent Air Conditioning Energy Assessment(s) carried out on behalf of Tester has now been completed, the report and certificate have been lodged on the Governments Non-Domestic Energy Register (https://find-energy-certificate.digital.communities.gov.uk) and will remain valid for 5 years as proof of your company's compliance.

To access the Air Conditioning Report and Certificate please click the following link and enter the username and password contained in this email.

The full reports and the enhanced energy data will remain accessible for you to download until 02/02/2021 unless you have subscribed for on-going access to our service.

https://system.acewizard.co.uk

Username - EndClient

Password - XXXXXXX

Please note: on first log in you will be asked to change your password and add a recovery email address.

Kind Regards

Tester

The client has a default access period, at the time of writing it is 12 months, and this includes access to the ACE Wizard End Client F-Gas Logbook and PPM system. Access to these systems beyond can be sold separately to the End Client by the associated assessment firm or ACE Wizard Ltd.

Other things to do in ACE

To replicate an entire project - Click on the "COPY" tab, most of the data within a project will be replicated into a new project, some items you will be given the option to choose if these sections are copied in to the "new" project. However, it the Inspection fields section for all Volumes and Sub-Systems will not replicate into a new project. Also, the recommendations will replicate; you will need to click "UPDATE RECS" to regenerate all saving calculations and graphs.

Support – To contact ACE Wizard for advice on using ACE, to raise a bug, to suggest an improvement or to have systems added to the database email support@acewizard.co.uk or call 01420 446202.

Training – Please contact your accreditation scheme or ACE Wizard Ltd on the details above.

Additional Help – Visit https://www.acewizard.co.uk/ace-training where updates and new training videos will be posted.