XFP
NETWORKABLE
ANALOGUE
ADDRESSABLE
FIRE ALARM
CONTROL PANEL

ONLY EXPERIENCED INSTALLERS OF ANALOGUE ADDRESSABLE FIRE SYSTEMS SHOULD READ THIS DOCUMENT

quick guide
in the form of a
worked example

IMPORTANT NOTES

It is assumed that the person reading this guide is:

✔ Familiar with the concept of analogue addressable fire alarm systems and is skillful in their installation.

✔ A competent person who is qualified to connect the mains (230V a.c. supply) AND has READ the safety instructions in the main XFP engineering manual.

✔ Has enough design ability to know where and how many loop isolators to use, calculate battery sizes, etc., without asking.

✔ Has a PC loaded with the latest version of the XFP's programming software tools and is familiar with the use of this kind of PC software.

If you do not meet ALL the above criteria, READ the FULL XFP ENGINEERING MANUAL INSTEAD.

ABOUT THIS GUIDE

This quick guide follows a worked example of a hypothetical XFP installation (at FREDCO Ltd) and is designed to show as many features of the XFP and their implementation as possible.
Although it is unlikely that such a small installation would contain so many variations to the normal standards, it gives a relatively quick overview of the system's capabilities for experienced installers.

For the purpose of this guide, it is assumed that:

• you have fitted the hypothetical XFP system illustrated and outlined on pages 3 to 5.

• the circuits are fault free and connected.

• the panel is switched on and you are familiar with the default access codes for the panel.

• you have loaded the latest XFP software onto your PC and connected the upload download lead (supplied in the XFP507 kit) to the XFP and the PC's comms ports.

Disclaimer

FREDCO SYSTEM ILLUSTRATION (FIGURE 1)

SYSTEM OUTLINE

A brief outline of the FREDCO installation this guide is based on (see figure 1, page 3) is given below:

- The premises comprise an office and warehouse.

- The insurance company requires the warehouse to be covered with automatic detectors when 'unoccupied' but accepts that a less sensitive level of smoke and heat detection is sufficient when the building is 'occupied'. The client has pointed out that this may still cause false alarms.
  A compromise has been reached by all parties that heat detection with a lower sensitivity level of smoke detection will be acceptable on a 'double knock' facility (Type 'A' dependency).
  Note, if a call point is activated an immediate alarm condition is raised.

- Diesel powered vehicles and forklifts enter the warehouse (zone 4) during normal working hours and there is a strong possibility that smoke levels in the warehouse will surpass the trigger point of an optical detector.

- Since different people enter the building at different times a facility to manually put the system into 'occupied' mode is required (as opposed to using a time switch).

- It is acceptable for the system to automatically enter 'unoccupied' mode at 18:00 hours but there is no requirement for this facility at the weekend.

- A digital communicator is installed for the burglar alarm and its fire channel needs to be connected to a remote manned centre for monitoring.

- The FREDCO building has three floors with two staircases (north and south). There is a requirement for smoke vent control from these staircases should they or any adjacent zones go into Fire.

- There are three magnetic door releases of the failsafe type already on the existing system. These should be reused but should only be re-armed after the system has reset (not when it is silenced).

- One zone of old conventional detectors are to be re-used (zone 5).

- Sounder beacons should be used in areas where there is likely to be a lone person, for example, in the gents and ladies toilets.

- The FREDCO building is connected via its south staircase fire escape to an adjoining building. There is a requirement to release the lock on FREDCO's fire escape should the fire alarm in the adjoining building be triggered, but not vice versa.

- A connection should be made to the adjoining building's fire panel which will sound FREDCO's sounders if it triggers but NOT activate its digital communicator. The FREDCO system should automatically silence when the adjoining building's panel is silenced.

- The adjoining building's panel is also required to sound if the FREDCO panel triggers. An output is therefore required to signal when FREDCO's alarm is sounding. This output should be delayed by three minutes, unless it originates in the warehouse when it should be instant.

- There have previously been incidents of people smoking in the entrance foyer (zone 8) resulting in the Fire Brigade being called out because a smoke detector had triggered. To help combat this, all interested parties have agreed that a two stage timer should be used in the form of an initial 'input delay period' followed by a separate 'user investigation period', prior to a full alarm being raised in this area only. These two time periods should be less than 4 minutes when added together. If the panel HAS NOT been reset, or the investigate function activated, during the input delay period, a full alarm condition will occur. If the panel HAS NOT been reset during the user investigation period, a full alarm condition will occur.
  Note, input delay period and user investigation period do not apply to call points because an alarm condition is raised immediately at the panel when they are activated.

From the outlined specification it can be derived that the following structure needs to set up:

- Nine Zones of detection (which includes one for the adjoining building).

- One Group of alarm sounders/beacons.

- Five Sets of output conditions:

  One Set each for the two vent controllers.
  One partially timed Set for connection to the adjoining building's fire alarm system.
  One 'all out' Set for the door releases.
  One Set assigned to release the connecting Fire Escape between FREDCO and the adjoining building.

- One panel relay assigned to the panel's internal programmable output 1 for connection to the autodial communicator.

- A dedicated fault output to the digital communicator.

- One panel programmable input assigned to activate 'occupied mode' on the operation of a momentary switch.

CONNECTING THE PANEL

It is assumed the panel's circuits are fault free and the mains and battery are OK. All devices are connected and properly addressed as per the manufacturer's instructions. Do not work on the with the mains connected (it will be necessary to enter access level 2 and mute the charger failure buzzer).

Enter access level 3 and perform a loop learn on the appropriate loop (for the purposes of this guide, we will assume it is Loop 1) using the navigation buttons on the front of the panel (see Appendix 1 for the panel's menu structures).

After a successful loop learn you will have an active one zone (zone 1) "one out, all out" fire alarm system.

All smoke/heat detectors, I/O units, manual call points are in zone 1, all sounders/beacons are in Group 1, and all sets of outputs are completely unassigned with no special cause and effect events.

You cannot assign any descriptive text at the control panel. You require a PC for this. For a full description of the functions available at this level, see Appendix 1 and refer to the main XFP Engineering manual and the Help files embedded in the XFP programming software tools.

PROGRAMMING / DOWNLOADING

With the latest XFP programming software tools loaded, connect the PC to the panel with the correct lead. Enter access level 3 and select 'Connect to PC'. Unless you have already connected the panel's NVM link, a warning to do so will be given when you try to upload to the panel.

On the **Loop Summary** page click **Load Loop 1 From Panel 1**. All the connected devices will be loaded together with the default XFP configuration. The device number and type will be as per figure 2, columns 2 & 3 with the exception of device 36 which needs to be a nonlatching I/O unit.

The **Loop Summary** page is arranged in a simple way to allow speedy input of the required typed data.

The type of device will be automatically inserted in the **Type** column. However, device 36 needs to be changed to a non-latching I/O unit. Select Interface > Non-Latching I/O, click on **Enable Type/Zone changes** and click on device 36 type to change its type.
Click on the **Zone Config** tab (see figure 7, page 9) and type in the appropriate names of the zones from figure 1, page 3. Don't do anything else on the **Zone Config** page but return to the **Loop Summary** page.

Click on **Enable Type/Zone changes** to enable allocation of the correct zone/group/set.
Select the appropriate zone/group from this box and click on the zone/group/set column to change the zone/group designation as per figure 2. When finished, unclick **Enable Type/Zone changes** again to disable further changes. Devices with a '+' (multiple function) after them can be edited by clicking on the device number, or right-clicking on the device in the **Loop Summary** page.

Click on device 1 in the **Dev** column to highlight the device and enter the appropriate text from figure 1. Hit return, and repeat for device 2, etc.

FIGURE 2

The base sounder column is for special information and must be entered on the **Loop 1** page.

Figure 3 shows the **Loop 1** page after device 3 has been right clicked. It is on this page that you will enter specific device special information.

You will note that I/O units can be allocated to sub-addresses and channels as well as being configured to be Input or Output units.

This is a universal drop down screen and it shows the default configuration for an I/O unit. In this example we have used an individual I/O unit for each individual function, this is to keep it as simple as possible.

The only decision that has to be made is whether the unit is an input or an output and the consequential allocation to either a zone or a set. In this scenario, sub-address 0 of device 3 is programmed as an output, assigned to the I/0 unit's channel 1 and the panel's Set 1.

If in doubt refer to the Help files embedded in the programming tools.
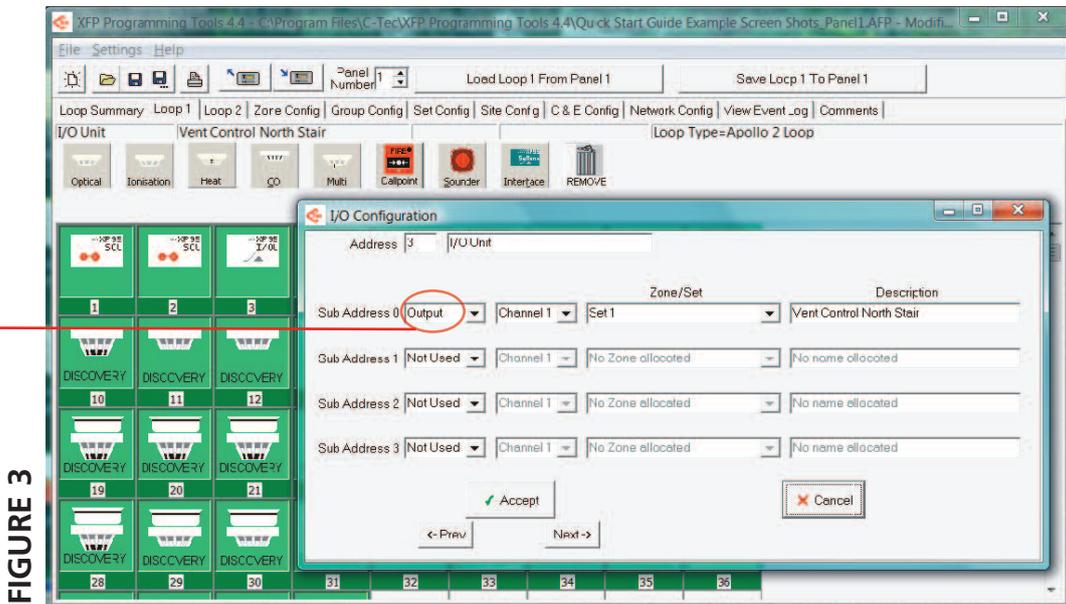
FIGURE 3

Figure 4 shows the drop down menu for a multi sensor. It can be seen that there are a myriad of settings to choose from depending on the special functions required.

Under sensitivity you can set (because this is a Discovery multi sensor) the different modes of operation for either occupied or unoccupied cases.

You can set the function of the ancillary base sounder (if fitted) by ticking the 'Has Base Sounder' box and allocating it to a sounder group.
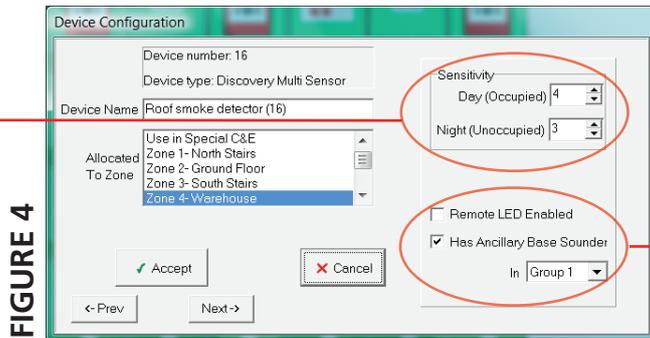
FIGURE 4

Figure 5 shows the default set up of the sounder ringing patterns that will be displayed when the **Group Config** tab is clicked. We have one out all out with no phased delay. The default set up is fine for us.
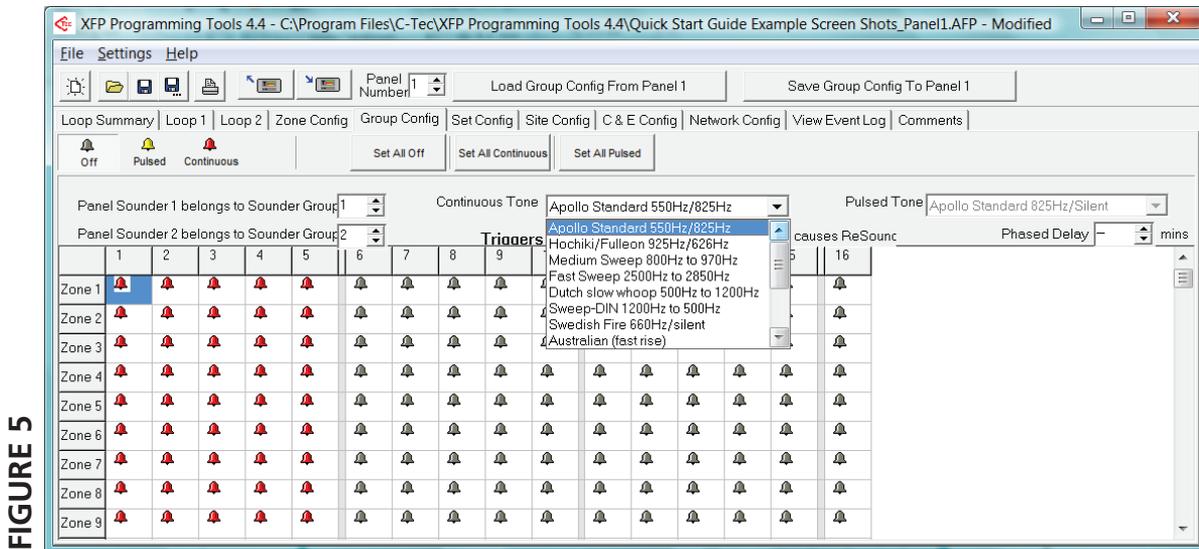
FIGURE 5

Figure 6 shows the **Set Config.**

Sets 1&2 are allocated to the smoke vent controllers. The zones ticked are those designated adjacent to the respective staircases.

Set 3 triggers the adjoining building's panel (zone 9 is unchecked to avoid a 'deadly embrace').

Set 4 triggers the door releases but is NOT silenceable.

Set 5 triggers the FREDCO fire escape door release when Zone 9 (next door) is triggered.

Panel relay 1 is allocated as the remote output to the communicator.
Note, it is not triggered by the adjoining building's alarm (zone 9) but IS silenceable.
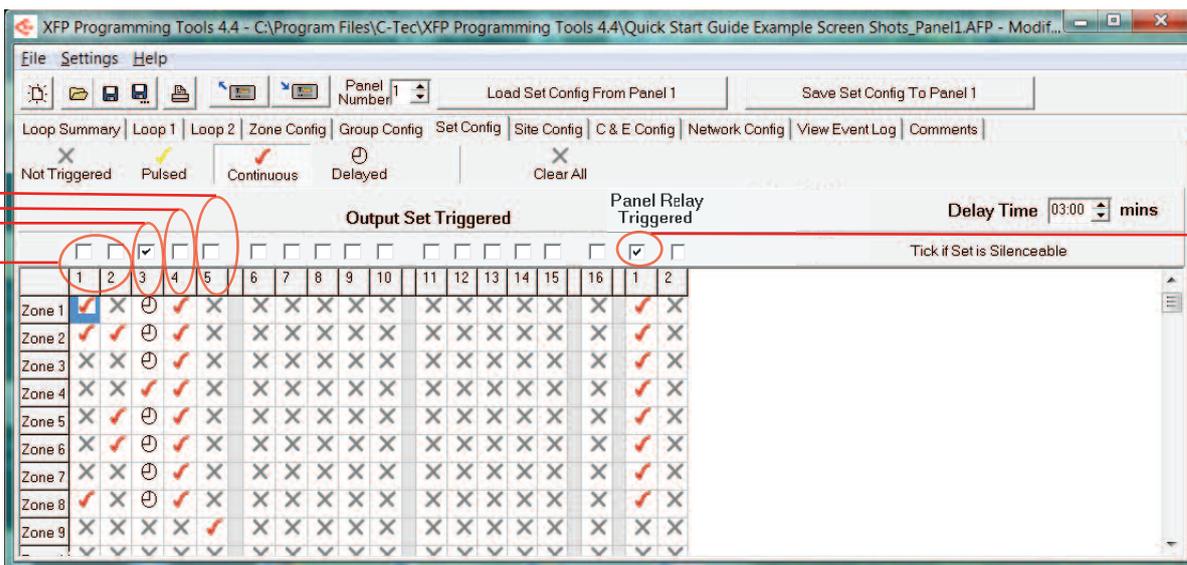
FIGURE 6

Figure 7 shows the **Zone Config** window.

Zone naming was done previously. For a fuller explanation of this page refer to the Help files embedded in the programming tools.

Output delays refer to what happens AFTER the zone has triggered.

Zone dependencies refer to what needs to happen BEFORE the zone will be triggered. This is an important distinction and should not be overlooked. In this example there are no requirements for zonal delays - just dependencies. The default setup for a zone is normal, i.e single knock, no investigation and no occupied/unoccupied preferences. These are shown accordingly. Most zones will be Normal.
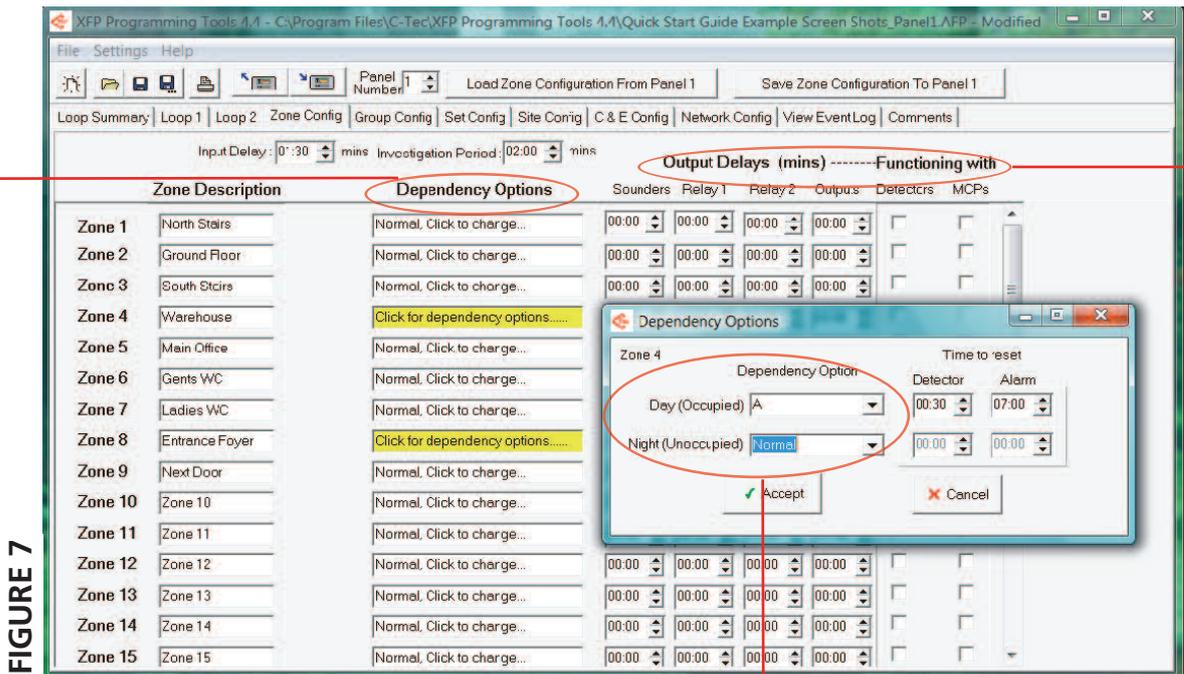
FIGURE 7

There are five dependency options for both occupied and unoccupied modes. For a full explanation of these modes - please read the Help Files. Figure 7 illustrates the dependency for Zone 4 (the warehouse) and its requirement for double knock (type 'A' dependency) during the occupied mode. The adjacent times give times for detector reset and the period in which a double knock is recognised.

For the Zone 8 window (not shown) there is an allocated investigation time which is pertinent to the investigation requirement for the smoke detectors in the entrance foyer.

Figure 8 is the **C&E Events** window which shows the special cause and effect set up for this example. It is usually easier to set up normal C&E requirements using the 'Set Config' page.
However, there are cases when this type of setup will not perform the more complicated functions.

This page is manipulated through a series of pull down menus. It is very powerful and should only be used if you know exactly what you are doing.

The equation example shown is to allocate the required operational function of entering the occupied mode when the panel's internal input 1 is activated/shorted (thus emulating a push-to-make switch). The panel will exit occupied mode when it automatically enters 'Unoccupied' mode at the time(s) entered on the **Site Config** page (see figure 9).

FIGURE 8
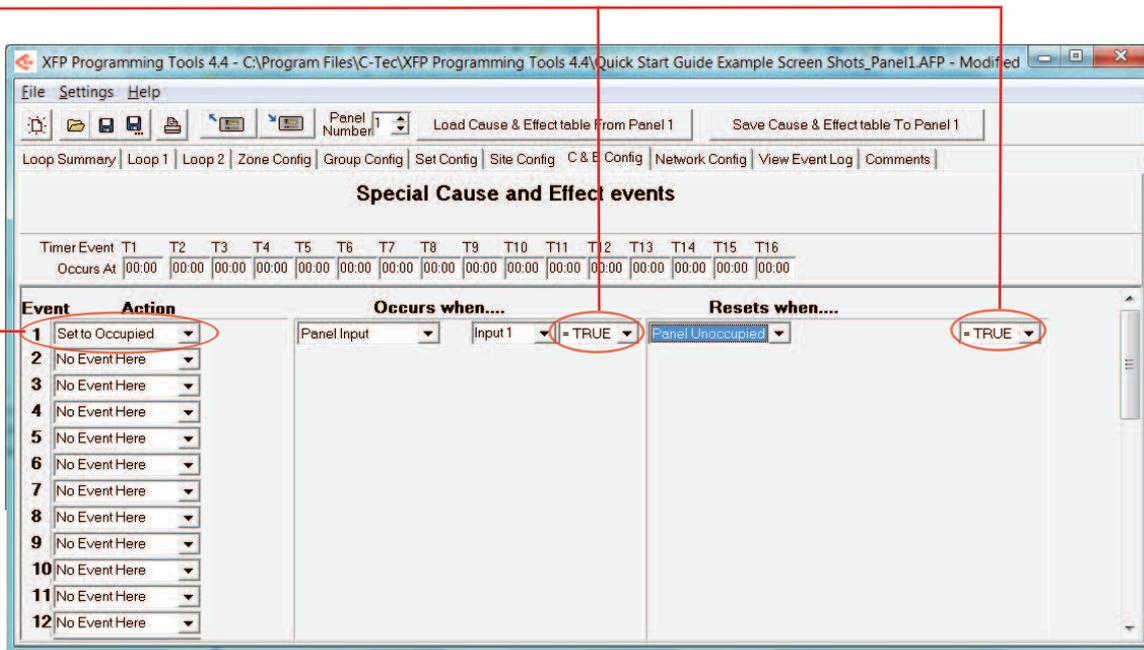
There are many other functions that can be implemented, refer to the Help files embedded in the programming tools for details.

Figure 9 shows the **Site Config** page. It is on this page that general site information is entered.

The occupied/unoccupied mode is normally entered here. In this scenario we are set up to enter the unoccupied (night) mode automatically. It is clear that the occupied (day) mode could be entered automatically as well but in this case the requirement was for manual entry as described immediately above. Note, the effect of ticking Sat and Sun is zero but is included in case somebody enters the building unexpectedly, say to do overtime on a Saturday, and hits the Occupied switch.

The maintenance date will only be uploaded if this box is checked.

The rest of the screen should be self-explanatory. For a fuller explanation of this and the non-reviewed screens please go to the Help files embedded in the programming tools.
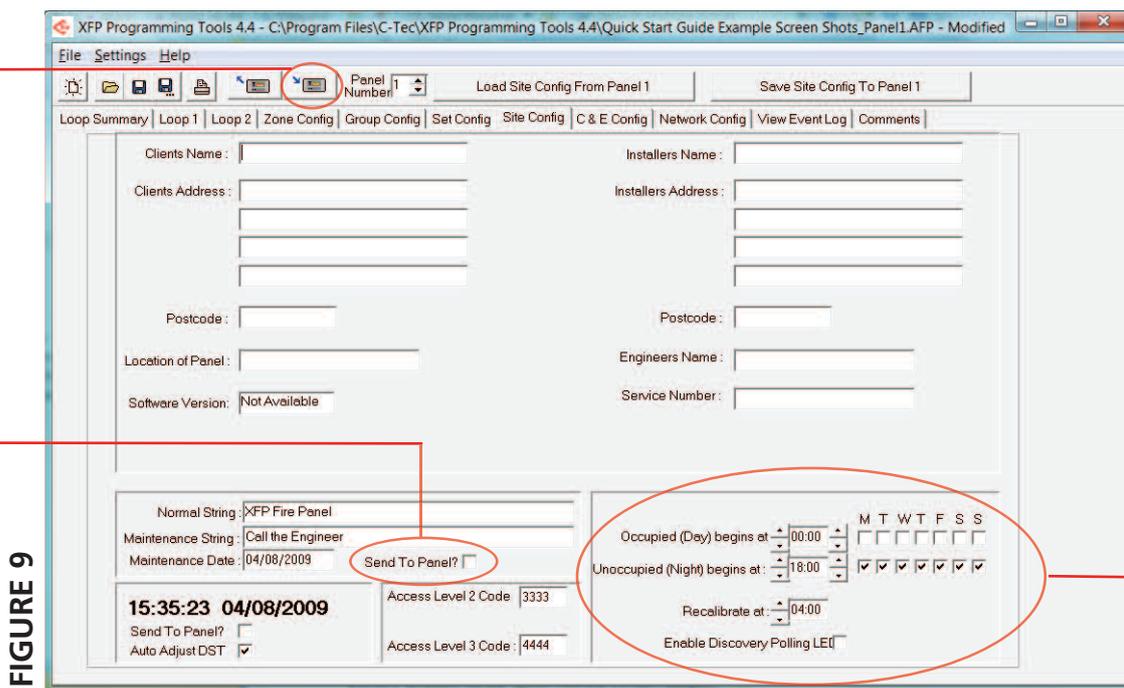
FIGURE 9

FINISHING

On the **Loop Summary** page click **Save Loop 1 to Panel 1** to upload all pages of information to the panel.

Remove the NVM link and the lead from the PC to the panel.

Escape access level 3 to return the panel to normal mode.

Close the panel lid and reconnect the mains.

The system is now fully programmed as per the specification.

FOR MORE DETAILED INFORMATION READ THE MAIN XFP ENGINEERING MANUALS AND THE HELP FILES EMBEDDED IN THE PROGRAMMING TOOLS.

APPENDIX 1 : OVERVIEW OF MENU OPTIONS @ ACCESS LEVELS 1, 2 & 3

Menu button
on front of panel

AL1

ENTER ACCESS LEVEL 2 ▶
DISPLAY FIRE EVENTS
DISPLAY FAULT EVENTS
DISPLAY DISABLEMENTS
DISPLAY ZONES IN TEST
ENTER ACCESS LEVEL 3
LAMPS TEST
DISPLAY ALARM COUNTER

Note that the menu options shown
in **bold** will only be available if
relevant to the panel's status

Keyswitch
on front of panel ▶ | K/S ENTRY | | CODE ENTRY |

AL2

ENTER ACCESS LEVEL 3 ▶
DISPLAY FIRE EVENTS
DISPLAY FAULT EVENTS
DISPLAY DISABLEMENTS
DISPLAY ZONES IN TEST
LAMPS TEST
DISPLAY ALARM COUNTER ▶
SET TIME/DATE
EVENT LOG FUNCTIONS ▶
SET/CLEAR DISABLEMENTS ▶
CHANGE ACCESS LEVEL 2 CODE

DISPLAY ALARM COUNTER
Clear to todays date?

PRINT EVENT HISTORY?
DISPLAY EVENT HISTORY?
RESET EVENT HISTORY?

Note that PRINT EVENT HISTORY
option is only available on the
1 or 2 Loop, 32 Zone XFP model

ENABLE/DISABLE ZONES
ENABLE/DISABLE SOUNDERS
ENABLE/DISABLE OUTPUTS
ENABLE/DISABLE RELAYS
ENABLE/DISABLE DEVICES
ENABLE/DISABLE FAULT RELAY
ENABLE/DISABLE OUTPUT DELAYS

| CODE ENTRY |

AL3

DISPLAY FIRE EVENTS
DISPLAY FAULT EVENTS
DISPLAY DISABLEMENTS
SETUP PASSWORDS ▶
CONNECT TO PC
NETWORK FUNCTIONS ▶
COMMISSIONING FUNCTIONS ▶
ENGINEER FUNCTIONS ▶

CHANGE ACCESS LEVEL 2 CODE
CHANGE ACCESS LEVEL 3 CODE

SET COMMS FUNCTION
SET PANEL NUMBER
SET PANEL FITTED

LOOP LEARN
FIND NEW DEVICES
SHOW FITTED DEVICES
ASSIGN ZONE/GROUP
CALIBRATE DEVICES
COMMISSION THE LOOP(S)
SHOW CALIBRATION PROBLEMS
SHOW DUPLICATE ADDRESSES
SET DAY/NIGHT TIMES
ENABLE/DISABLE DST ADJUSTMENT
CONFIGURE SOUNDER DISABLEMENTS
MAKE A CLEAN START

SET/CLEAR DISABLEMENTS ▶
MONITOR A POINT
TEST DEVICE OUTPUTS
TEST OUTPUTS SETS
TEST SOUNDER GROUPS
TEST PANEL RELAYS
WALK TEST
BLINK DETECTORS LEDS
INTENSIVE DEVICE MONITOR
LOOP TEST
DISPLAY DATABASE
VERSION NUMBERS
SHOW PSU STATS
ENABLE/DISABLE EARTH FAULT
SHOW LOOP CURRENT
SHOW DISCOVERY EEPROM
SHOW NETWORKED EVENTS

ENABLE/DISABLE ZONES
ENABLE/DISABLE SOUNDERS
ENABLE/DISABLE OUTPUTS
ENABLE/DISABLE RELAYS
ENABLE/DISABLE DEVICES
ENABLE/DISABLE FAULT RELAY
ENABLE/DISABLE OUTPUT DELAYS