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# Project:

Wokingham Town Council, Town Hall, Wokingham, Berkshire – Fire Alarm Upgrade Works.

# Project Manager:

Mike Aslin – Buildings and Market Officer

# Project Objective:

The building was constructed as a police station and courthouse in 1860 and later accommodated a fire appliance in 1877. The building now serves as the main town council office with three hireable function rooms to the public and three retail units, two of which are restaurants and one is a locksmith/cobbler. The building is a Grade 2\* listed building.

The existing fire alarm system is very dated and has been added on to over time to meet the changes in use of the building. The wiring in place throughout the building is a mixture of pyro and FP200. The category of fire alarm is of a mixed ad hoc coverage and necessitates the need for an upgrade to a full L2 system.

The main hall and ancillary rooms are all constructed of ornate timber and provide a high fire loading. The walls and ceilings are all listed and therefore no surface cable runs, or wall chasing can be carried out within the front of house areas. Therefore, the proposed fire alarm upgrade works are as follows:

Provision to install wireless fire alarm system as a “hybrid” system to bring the premise up to an L2 standard for the purpose of life protection.

This is subject to a wireless survey being carried out and wireless transmission signals being considered acceptable for installation.

This scope of works and all associated plans are a guide to adhere to as a principle of design, the “Contractor” is responsible for designing, installing and commissioning the system in line with this scope identifying and justifying any non-compliances. This document in no way verifies the design in accordance with BS 5839:1 2025.

## Project Location:

Wokingham Town Hall

The Market Place

Wokingham

RG40 1AS

## Accompanying Documents:

* Detailed floor plans in DWG format
* Fire Alarm Existing plans
* Fire Alarm Proposed plans
* Required cause and effects for the project
* Hotchiki Product Brochures
* Asbestos Register

## Project Timeline:

The project timeline is anticipated for all Quotation’s to be submitted by noon on Friday 29th August 2025

The project works will need to be factored around the use of the building, but there are three identified opportunities for installation between late September and November. The Town Council’s preference will be for installation at the earliest opportunity.

# Project Description:

The fire alarm upgrade works are to take into account the existing fire alarm replacement/upgrade. The replacement provision of power supplies and door hold open magnets and the addition of a disabled refuge system to be installed to BS 5839:9 within the landing of the first-floor lift and the main control panel to the ground floor entrance.

# Existing System:

The existing system in place is a dated conventional panel split into three zones across the building, this does not take into account different occupancy types or compartmental layout.

The conventional panel has numerous interfaces wired into the sounder circuit across the site, these include the automatic sliding doors access from Denmark Street, the first-floor kitchen feeds 5 no. 230vac door magnets, namely both sets of double doors in the main hall corridor and the kitchen.

A second door magnet provision covering the first-floor office space, the interface is believed to be at the panel at ground floor feeding a power supply located in the accounts office, this unit feeds all the office door hold open magnets, again 230vac.

The main boiler gas shut off is a manual fish key switch located adjacent the main fire alarm panel.

# Upgrade Requirements:

## Legislation and ACOP’s:

The upgrade of the system must conform to BS 5839:1 2025 and any wiring amendments or additions BS 7671:2018+A3:2024.

The system category will be upgraded to an L2 system with the interest of life protection.

## The Fire Alarm Control Panel:

The new fire alarm control panel is to be an advanced MX Pro 5202 analogue addressable panel (with Level 2 Access Key Switch) as part of a Hotchiki protocol hybrid system. The main fire alarm panel is to be located in the first-floor corridor on the wall between the accounts office and the kitchen/comms room.

Within the accounts office located on the wall to the Town Clerk’s office is a blank panel containing all the fire alarm connections from the previous panel location. All these cables feed back to the main fire alarm panel at ground floor level. It is proposed that existing cabling running from the existing fire alarm panel to this junction box which is all FP200 to be utilised to continue the communication signal to the ARC via the intruder alarm system.

## Repeater Panel:

An Advanced MX Pro 5000 fire alarm repeater panel is to be provided to the front entrance lobby, exact location to be verified at time of installation, this is to be considered as the main fire service access panel on arrival. The main entrance is considered that with the sliding doors and lift, the opposing entrance to the existing fire alarm panel. The wiring of the new repeater panel is to be run from the first-floor office main panel utilising ceiling voids for cable runs and any required power supplies to be located in the plant riser accessed from the office located above the ground floor disabled WC.

## Power Supplies:

The main fire alarm panel power supply to be a new designated supply fed by the main electrical distribution board located in the main shared office. A new circuit breaker is to be installed and certified by a competent electrician. The cabling serving the fire alarm panel feed is to be approved fire rated cable to a designated double pole fuse spur indicated with “Fire Alarm Do Not Switch Off”, this is to be located above the fire alarm panel at a reachable height without access equipment.

The repeater panel is to be fed from the main fire alarm panel.

## Wired Devices:

The reason for the main fire alarm panel to be located in the office is to firstly serve as a rapid and direct focal point for staff and secondly to help bring the cost down, the first-floor office area has two electrical distribution boards available with spare ways on to serve the fire alarm panel, disabled refuge call system and the fire alarm expanders. The ceiling within the first-floor office area is all suspended ceiling, it is therefore relevant to wire a loop from the main fire alarm panel to cover all the fire alarm devices located within the offices.

## Translators and Expanders:

A provision of 4 no. Translators have been accounted for in the design of the system as per the “Proposed Fire Alarm Plans” they are to be located in the main electrical intake room located on the ground floor, above the suspended ceiling in the ground floor disabled WC, above the ceiling of the first floor disabled WC and the main Translator in the electrical cupboard of the main shared office. It is intended that a cable run should be achieved between the first floor office and the ground and first floor disabled WC ceiling voids as these areas exist in mezzanine half levels, it is also believed a further cable run should be achievable from the first floor office electrical cupboard to the electrical intake room on the ground floor, if this is not achievable then a PSU with battery backup to be accounted for the electrical intake cupboard provision. The design principle utilising 4 no. Translators is based on a wireless survey being carried out and signal strengths being confirmed for the identified locations as per the “Proposed Fire Alarm Plans”, should a wireless survey identify further wireless expanders to be needed this must be demonstrated within the wireless survey. Likewise, if a wireless survey identifies the need for less translators, then this is to be detailed in the wireless survey.

Where cable runs are achievable for the translator, these are to be EK-WL8-TRH wireless translator modules, the main being run as a translator to be located in the main shared office electrical cupboard, the remaining three are to be hard wired Translators run in loop powered expander mode except where cable runs are not achievable in which case a battery back-up BS EN 54 PSU is to be provided to a EK-WL8-EXP Wireless Expander.

## Door Hold Open Devices:

Within the first-floor offices a PSU with a loop powered interface is to be provided and the existing door hold open magnets to be replaced with 24vdc units. There is no requirement for battery back-up for the office doors therefore a standard transformer rectifier unit will suffice. This is to be hard wired interfaced within the admin office loop.

The existing power supply within the kitchen serving the main hall corridor double doors and kitchen door to be utilised to feed a transformer rectifier unit within the kitchen and a wireless interface for a trigger. All door magnets to be replaced with 24vdc magnets utilising the existing cabling in place serving the 240vac devices.

## Boilers:

The main boilers are provided with a BMS shut down; this is currently via a fish key switch adjacent the main fire alarm panel. It is proposed that the BMS to be directly interfaced off of the fire alarm system with a cause and effects delay put in place unless the sensor activated is directly in the boiler room (this is detailed in the proposed cause and effects matrix). The interface to be a Hotchiki EK-WL8-OUT output Module.

## Denmark Street Sliding Doors Interface:

This will be directly interfaced with a Hotchiki EK-WL8-OUT Output Module to open on fire alarm activation (Without Delay).

## Retail Units:

The three retail units will require input (EK-WL8-IN) and output (Hotchiki EK-WL8-OUT) relays to be configured as follows:

WTC - Panel to receive input from retail unit without delay, signal the remote monitoring ARC for keyholder response and activate the designated “Staff Alarm” (in accordance with Clause 18 BS 5839:1 2025) sounder to be a different tone and volume to the fire alarm signal and located within the shared office on the first floor.

Retail Units – On activation of any sensor on the WTC Advanced Panel a 3-minute delay is to be placed on the wireless output units on a single activation of WTC’s advanced panel within each retail unit to trigger the individual retail units for a full evacuation. On a confirmed fire, (two smoke sensors or a single heat detector or call point) there is to be no delay. This is not an investigation as specified within BS 5839:2025, this delay is imposed by a managed risk assessment based on the management of Wokingham Town Councils fire procedure. This takes into account the minimum required compartmentation in place between units and the management procedures in place to allow for safe evacuation without any harm coming to life taking into account unwanted fire alarm signals.

The courtyard has an existing Haes conventional system installed.

In addition to this, the detection in the Courtyard restaurant is located on a grid system which is too low from the ceiling to conform to BS 5839: 2025, The tenant of the courtyard will be responsible for upgrading the level of detection in place to conform to a fully compliant system.

With regard to the front Restaurant Piccolo Arco and Timpson, a separate wireless panel is proposed for each unit to be a Zerio Plus panel with wireless devices to be separate systems independent of the main Advanced system but linked to the Advanced system as detailed above.

In order to carry out weekly tests without disrupting other building users a key operated isolation switch must be provided between the wireless input and output relay and the fire alarm panel in each retail unit, this will also assist with “Dead Heading” while resetting the panels.

There is a short corridor between Piccolo Arco and the Courtyard restaurant. Accessed from this corridor is the buildings main boiler and electrical intake rooms. The corridor is to be covered by the main Advanced panel with sounders, this is intended to evacuate persons from the corridor and plant room/electrical room but not the restaurants.

The cause and effects for the corridor to the boiler room and electrical intake room is to activate the sounder in the corridor which is also a Visual Audio Device as well as activate the office sounder only “Staff Alarm” (in accordance with Clause 18 BS 5839:1 2025) with a different tone and volume than a normal fire signal and signal at the panel in order to trigger ARC keyholder response. No other outputs are triggered or sounders around the building except the retail unit panels on a 3-minute delay.

## Cabling:

All cabling provided must be fire rated cable to BS 5839:part 1 and be secured with metal cable ties within suitable containment. Any cabling provided must be load tested and results made available in the O&M documentation on handover.

## Fire Stopping and Sealing:

Any compartmentation breeches must be made good by a competent person using approved fire rated products to re-instate the compartmentation where cable penetrations are required.

## Re-Decoration:

Where any existing wired devices are removed as much cable as possible must be removed without requiring the removal of any plaster or masonry, any old fixing points that aren’t re-used must be made good by applying galvanised blanking plates and contracting a competent person to plaster over these points and further decorate them and blend these areas in to not be noticeable on completion. Where wireless call points are installed in place of the existing wired devices, it is acceptable to remove the cabling in place and utilise the fixings of the back box to secure the wireless device. These contractor costs must be included in the initial quotation.

## Loop Calculations:

As part of the design proposal to be presented with the quotation of works by the contractor will be loop loading calculations and proposed device quantities.

The design proposal must be supported by a wireless survey to verify the wireless signals are within acceptable limits in accordance with the manufacturer's guidance.

## Existing communal devices:

The existing system is to remain live and in place right up until the proposed system is installed and ready to take over from the existing. This is to be structured into the plan of works to ensure there isn’t a period of time where the building is lacking fire detection. Once the proposed system is live, any old devices must be removed and wall surfaces to be made good. The cost of disposal of all provisions must be accounted for within the proposal.

# Commissioning – Cause and Effects:

The cause and effects must be agreed and clearly defined in a matrix that must be included in the proposal and O&M completed documents as well as a copy fixed to the wall alongside the zone charts within the main entrance and in the office area.

The following provisions must be accounted for:

* Alarm Receiving Centre to be alerted of all signals to initiate a key holder response.
* An investigation delay to be applied to the panel for 3 minutes for the retail units. This is to be applied in two parts, “First Alarm” (Any single smoke detector within WTC and any retail input) to activate on the panel and trigger the “Staff Alarm”. Any “Confirmed Alarm” (any two smoke detectors “Coincidence”, any heat detector and any call point) within WTC Advanced system to bypass the 3-minute delay.

A re-activation caused by any other device is to override the investigation delay.

* Any activation of the retail units to trigger the sounder in the office “Staff Alarm” at a lower volume and different tone as to alert staff but not disrupt occupants of the main hall. The panel will also signal the alarm as a fire condition in the restaurants zone and signal the alarm receiving centre for a key holder response at all times.
* Consideration must be given to “Dead Heading” inputs and outputs between the retail units and the main WTC Advanced panel.
* Further options are to be agreed and documented as part of the proposal.

# Operation and Maintenance Manual (O&M):

## Certification:

On completion of the installation the relevant installation and commissioning/modification certification must be provided alongside the panel configuration programming.

Staff training must be provided on the Advanced MX Pro 5000 panel and the cause and effects demonstrated to confirm understanding of the configuration, A signed sheet must be provided detailing the date and names of staff trained.

## Drawings:

Fire plans must be provided in both paper and electronic form detailing device addresses, cable changes “As Fitted” drawings and fire alarm zone charts again in a format that is orientated, legible and fixed to the wall adjacent all fire alarm panels as well as electronically in accordance with BS 5839:2017.

## Manuals:

Fire Alarm user manuals must be provided in paper format to the end user.

## Data Sheets:

Data sheets must be provided alongside the user manual for the fire alarm panel.

# Appendix A:

Required Equipment Provision:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Fire Alarm Control Panel: |  |  | Advanced MX Pro 5000 |  |
|  | |  |  | |
| Wireless Field Devices: |  |  | Hard Wired Field Devices: |  |
| Part No. | Description |  | Part No. | Description |
| EK-WL8-TRH | Wireless Translator Module |  | CHQ-WSB2 | Intelligent Loop-Powered Wall Sounder Beacon |
| EK-WL8-OV | Wireless Optical Sensor with built in VAD and sounder |  | YBO-BSB2 | Intelligent Base Sounder Beacon |
| EK-WL8-O | Wireless Optical Smoke Detector |  | CHQ-DRC2(SCI) | Intelligent Dual Relay Controller |
| EK-WL8-H | Wireless Heat Sensor |  | ALN-EN | Intelligent Optical Smoke Sensor |
| EK-WL8-CP | Wireless Manual Call Point |  | ATJ-EN | Intelligent Heat Smoke Sensor |
| EK-WL8-SND | Wireless Wall Sounder |  |  |  |
|  |  |  | ACC-EN | Intelligent Multi Sensor (Heat & Smoke) |
|  |  |  | HCP-E(SCI) | Intelligent Manual Call Point Isolator |
|  |  |  |  |  |

# Disabled Refuge Call System (EVCS)

In addition to the main fire alarm panel upgrade a BS 5839:9 disabled refuge system is to be installed and commissioned.

The system is to include a voice communicator “Type B” call point indicated with a green wheelchair disabled refuge panel. To be located on the first-floor landing in front of the lift and disabled WC.

The main panel is to be located within the main entrance at ground floor within the vicinity of the fire alarm repeater panel. The two existing disabled WC pull alarms are to be integrated to the system.

The equipment provision for this system is to be based around the “Alerter group” Wireless system or equivalent system, it must be wireless without the need for hard wired cables.

A signal should be triggered to the alarm receiving centre triggering a key holder response only. This should be configured in such a way that cannot be confused with an intruder or fire alarm signal.

As per the requirement for the fire alarm system, cable runs cannot be chased or fixed into the wall. It is therefore recommended to utilise any existing fire alarm cabling for signalling between ground floor and first floor, any cabling required to be concealed within suitable containment.

Where any cables are required the exact route and layout of the system to be agreed in advance of any progression of works, ideally this should be documented in accurate proposal plans to satisfy the requirements of the Grade 2\* building rating.