

Chapter Twenty One:

SYSTEM SUPPORT IS REQUIRED THROUGHOUT

SERVICING & MAINTENANCE

All systems require adequate inspection, servicing and maintenance throughout their life. Reasonable care should be made in this consideration during the design and build.



A review of each system's potential risk for injury or damage to property (risk matrix score or similar) should be undertaken every six months, or upon first reported fault visit, or sooner if circumstances dictate.

Potential hazards are to be identified and recommendations supplied for correction or reduction according to severity.

Access to all components should be reasonably achievable and the use of serviceable parts throughout should be allowed for, together with the availability of spare parts during the life expectancy of the system. If long lead times for replacement of any component are likely, then alternatives should be considered or contingencies accepted beforehand. High security sites may need spares built or stored in case of emergency that are readily available upon requirement or within a reasonable period.



Component manufacturer's recommendations should be taken into consideration unless their use within the system or environment has an overriding effect on them and the usual conditions of use are not met. Special adaptation or modification of any parts used, should be understood and authorized by the customer accordingly.

The designer/installer/maintainer of any system, should propose a formal servicing plan with 'Technical file' accounting for all works undertaken on every system, together with any recommendations given and a full installation/servicing history. Risk reviews for safety and system functionality should be carried out on a regular basis with cooperation from the customer/users accordingly.

Operator loads and forces should be tested and left in good working order with suitable adjustment made. Any need for excessive operator force should be reported accordingly and safety considerations raised where reasonably practical to do so.

The technical file should be available for customer view and hold all detail appertaining to the system from proposal through to current day. Details should include, but not be limited to; the original proposal together with any variation and order acknowledgement; drawings & diagrams with as built correction; component list and service schedule; engineering time and materials register; variations; modifications; recommendations outstanding and undertaken; work sheets and activity register; safe operation and use risk review with any proposals; system report; details of who has been involved in whatever aspect of the system including input by others, product interface, outside influencing factors, accounts, customer feedback etc.

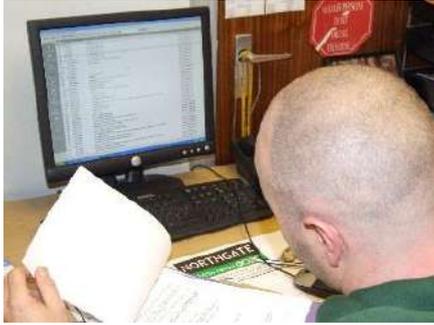
Recommendation typical priority order assuming all high risk hazards are corrected.

- **Reliability** **First**
- **Safety** **Close Second and always considered**
- **Security** **Third**
- **Convenience** **Fourth**
- **Upgrade** **Fifth**
- **Cosmetics** **Sixth**

All recommendations for system improvement should be prioritized in the above order so that the most important are dealt with first.

Customers should be encouraged to open and keep their own system file, within their own property records. This file should hold copies of all relevant details and information appertaining to any activity, or correspondence relating to the system.

Customers that have more than one system should hold independent files on each, so that clarity may be gained from information relevant to the system in question.



MAINTENANCE SCHEDULES (per system or opening)

Regular maintenance schedules for each installation should be drawn up by the system manufacture and be handed over to the owner or their representative, for each system. There is a legal obligation for owners to ensure that their power operated system, remains safe and is maintained accordingly.



The schedule should list a set number of standard site visits required and the level and type of use or abuse of the installation should be reviewed in keeping with any change. High use or server conditions usually requires more regular maintenance and site visits throughout the year. Each schedule should list the activity required on site of each part of the system, in an attempted to keep the system safe and in reasonable service.

Each visit should include servicing, inspection and reporting of the system, with the current state or condition of items as well as an overall safety review of it, investigations toward the general functionality of the system together with any changes or adjustments required upon the system, keeping adequate records of same.

Tests and checks of all equipment, controls and other such items should be recorded with any recommendation made according to continued system reliability and or safe function.

Damage, ware & tear and suspect items, should have repair or upgrade recommendations submitted for instruction as soon as able, along with any modification requests.



TYPICAL SCHEDULES INCLUDE; but are not limited to;

User appraisal	Does the system work as required by the users?
System appraisal	Is the system suitable and fulfilling its purpose?
Safety matrix update	Is the system safe and what else could be offered or done?
System report update	Is the system as previously recorded, what changes if any?
Physical support	Are the supports and their foundations reasonably sound?
Furniture & fixings	Is the furniture and are the fixings in good order?
Stops	Are the stops active and secure?
Gate	Is the gate in reasonable order and sound?
Levels & Gaps	Are the ground levels and working gaps in order?
Operation	Does the gate move correctly, free of obstruction?
Electrical	Enclosures, cables, glands, ducts, conduits, etc. in order?
Operators	Operator service and check fixings and performance.
Force	Power loadings test and adjustment as required?
Manual override	Is the manual control of the system in order?
Controller	Does the controller perform correctly under all needs?
Command	Do all command items work correctly and in fair state?
Safety	Do all safety devices and features perform correctly?
Miscellaneous	Is each Misc. item in order?
Communications	Does the communications facility function as required?
Interfaces	Are all interfaces operational where required (alarm?)?
Associated	Do all associated items perform as required (Lighting)?

Each servicing visit inspects and tests each aspect of the installation where able at the time of inspection. Items untested for any reason could be viewed in a poor light or disregarded accordingly.

Work sheets and reports with suggestions and recommendations are created either during or shortly after each visit.

All data is filed within the system file and photographic records added as able.

The reliable safe operation of all systems is a priority in both powered and manual use and any item considered to jeopardise this should be replaced or removed, subject to type.

RISK MATRIX SCORING REVIEW

Systems should be regularly re-scored in line with the latest release of the Risk Matrix Platform and action taken to improve the safe use of each accordingly



New methods, products and service are constantly coming to market and consequentially rendering some old ones as less beneficial. A review of all safety options should be made and investment toward the most effective encouraged accordingly.

Site Name: Entrance gate system Latitude: 0
 Address: Stratford court Longitude: 0
 Address 2: Salisbury road
 Post Code: GU14 7AJ
 Date: 01/07/2015

POWERED SAFETY SCORE: 82

101 to 110 - Low Risk (Potential of Minor injury)
 111 to 200 - Mid Risk (Potential of Treatment injury)
 201 to 250 - High Risk (Potential of Permanent injury)
 251 to 290 - Severe Risk (High likelihood of Serious injury)
 300+ - Extreme Risk (Extreme likelihood of Serious injury)

RISK	DETAILS	SCORE	MAX
Presence	TIMED RESTRICTION	2	10
Logic	SULLY AUTO	6	10
Property Type	MULTI USER	18	20
Environment	NORMAL	2	10
Location	SUBURBAN/OFF STREET	20	40
Level Of Use	2L 50	4	20
Users	UNTRAINED	10	20
By Modes	OCCUPANCY	2	20
Pedestrian Access	SEPARATE UNRESTRICTED	0	30
Type	SWING FAIR	2	20
Gate Construction	OPEN METAL	2	10
Opening Width	4M 6M	2	10
Logical Lock Width	7000	2	10
Physical Barrier	GOOD	0	10
Gate Structure	GOOD	0	20
Control	LEVEL OPERATION	2	20
Large Redundant Gaps	HIGH FORCE	10	20
Small Redundant Gaps	HIGH FORCE	10	20
Anti Pressure	NOT EVIDENT	0	10
Drifting On Closing	MEDIUM	0	10
Entrapment	MINIMAL	20	20
Lower Impedance	NOT EVIDENT	0	10
Shear	NOT EVIDENT	0	10
Shearline	NOT EVIDENT	0	16
Structural Defects	NOT EVIDENT	0	12
Trap Lockdown	EVIDENT	2	10
Hazard Condition	UNLIKELY	0	20
Operation	NONLOCKING	0	20
Manual Override	EASY	2	20
Power Supply Rate	SUITABLE	0	10
Power Software	LOCAL OPERATION	0	10
Safety Trip	EVIDENT	0	18
System Change	GOOD	0	10
Operator Exit	ADEQUATE	0	20

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Safety Devices: 70

SAFETY	DETAILS	SCORE	MAX
Contact Sensing	ACTIVE	30	30
Photoswitch	NONE FITTED	0	10
Loops	IN & OUT	20	20
Stop Button	NONE FITTED	0	10
Signaling Lamp	NONE FITTED	0	5
Sonader	NONE FITTED	0	2
Traffic Lights	NONE FITTED	0	10
Position Indication	NONE FITTED	0	6
Safety Edge	NONE FITTED	0	20
Traffic Flow Mirror	NONE FITTED	0	10
Safety Curtain	OUTSIDE ACROSS	20	50
Physical Protection		0	40
Radar		0	40
Lasers		0	50
Logic Change		0	100
Traffic Calming		0	40
Counter Balance		0	20
Damping		0	10

REPAIRS & MODIFICATIONS

Repairs and modifications on any system can be classified into one of the following:

Alike Repairs Straight forward component replacement with little if any change upon the system other than minor adjustment or recoding, etc.

Alternative Repairs An alternative to the alike option, often required when parts are obsolete or less suitable than a current replacement part. These works are otherwise similar to the alike repair without any substantial change to the system, other than minor adjustment or recoding, etc.

Upgrade Works that upgrade the system in a particular way. Additional or new parts that enhance the installations safe use, performance, reliability, durability or service, that are other than a major modification or overhaul, etc.

Modification A clear change or addition to the system that affects its, life expectancy, performance, function or service.

Overhaul Usually new automation on and existing gate, or similar. Also including servicing the gate and often renewed furniture and fixing.

Extras Additional items that enhance the installation or provide more feature or functionality and alike (typically adding communications or surveillance etc.

Replacement Starting again with a new similar system, including gate, furniture and alike.

Alternative Install A complete replacement often with a totally different system and or building, civil and landscaping alterations.

Other useful points to consider are:

Life expectancy Original system's design & installed life estimate and the remaining life estimate, pre and post works?

Worthiness Economy of repair over remaining reliable life. Is it worth the works or should an alternative be considered?

Life ownership cost How much does the system cost over its life, including all servicing, maintenance and general wear & tare costs.

Long term value Any under engineering, or shortfalls in the design, at the time of the original system's installation will cost far more than the saving it offered, within a shorter time than is usually expected. Also the inconvenience and added risks increase substantially.

Wise investment Do it right first time and if in doubt Please do not do it at all!