Workshop 2e:

Lift regulations – the changes and strategies to manage your expenditure

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Chaired by: Stephen Chalmers
Room: Harewood Room

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Welcome NHMF

Jonathan Speck - Lerch Bates Ltd

"Lift regulations – the changes and strategies to manage your expenditure"

~ What is changing with regard to lifts and how might this impact your planning?

~ How do I decide between modernising or replacing lifts?

~ How do you rate value for money with respect to lift maintenance services?

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Topics covered today will include:

1. Codes & Standards - An update on forthcoming changes.

2. Modernisation vs Full Replacement – Making a timely and right decision.

3. Managing Lift Maintenance – Identifying the problems and issues faced and showing a cost effective solution.

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1. Forthcoming changes in Lift Standards

And the effect this will have on the choice of modernisation or the replacement of lifts

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EN81-1 & EN81-2 replaced in 2017

- Biggest shake up in 40 years
- The new EN81-20 and EN81-50 comes into force in 2017
- Significant changes including the introduction of new safety devices and systems
- Cost implications
- New lift prices could increase by up to 20%

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EN81-80 stays the same for now

- The standard for improving the safety of existing lifts EN81-80 has not been revised to include amendment 3 of EN81 parts 1 & 2, 2009.
- There are no revisions of EN81-80 in progress as yet
- Unlikely such revision will be in force to cover EN81-20 as a harmonised standard until 2020.
- Modernisation to EN81-80 between now and 2020 avoids the need to include many costly safety devices

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Possible implications of the change

- If you fully replace a lift before 2017 you could save money
- After 2017 modernisation could be more cost effective than a full replacement, at least in the short term
- After 2017 it may not be possible to install a new lift in an unmodified shaft and builders work might be expensive

Pertinent questions may be…

- What are the risks & who is going to assess them?
- Who will take responsibility for the decision?

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2. **Modernisation versus Full Replacement**

…making a timely, right decision

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When should I replace my lift?

Reasons to modernise/replace include:

- Changes or updates in Regulations i.e. EN81-80
- Changes in the buildings usage
- Aesthetics i.e. renewal of internal car finishes and landing fixtures
- Obsolescence
- Reliability issues

…keeping your Vertical Transportation equipment running smoothly for the lifetime of your building and ensuring safety and reliability

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Possible Actions	Consequences
• Do nothing	➢ Increased maintenance costs and extended un- planned lift downtime (months)
• Fit a new lift	➢ Control over timing of downtime ➢ How do you know if the equipment is fit for purpose?

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However, before you consider modernisation or new equipment…

1. Review your VT portfolio to establish the condition of the equipment usually by audit
2. The information gathered assists in identifying problem areas, be they maintenance costs, downtime, obsolescence etc
3. Construct a detailed plan of modernisation/replacement (the option of replacement is given if possible post audit).

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Modernisation versus Replacement

Modernisation - the pro's	**Modernisation - the con's**
• Only replace components that need replacing	• Can be more expensive than a new lift
• Down time can be reduced by "smart" sequencing	• Needs careful design to pick up all consequential works
• Lead in times can be shorter than new lifts	• Work can be > 1 week per floor
• Components can be selected to suit the application	• Higher skill set required from engineers
	• More detailed final inspection required.

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Replacement versus Modernisation

Replacement - the pro's

- Pre-engineered lifts are cheap (inexpensive)
- Compliance with all current standards
- Don't usually require a machine room
- Installation times are typically < 1 week per floor

Replacement – the con's

- Starts/hour and operations per/annum needs to be fit for the lifts usage
- Notified Body approval required if pit and headroom is restricted
- Many manufacturers have closed protocol equipment
- Standard layouts may not suit the existing shaft, creating building work on each landing
- Bespoke new lifts can be costly.

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So what is best? Replacement or Modernisation?

- There is no simple answer

- It's horses for courses

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Some points for further consideration

- Are changes expected to lift usage in the future?
- How energy efficient is the proposed replacement lift?
- Who will be expected to maintain the equipment after the defects liability period and in the future?
- Does the existing lift shaft have the right dimensions to fit a new lift and what consequential builders work (costs and disruption) will be involved?
- Can the building cope with the lift downtime?
- Understanding of on going requirements post audit review

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Information is the key – understanding the issues / portfolio

BRISTOL ROYAL INFIRMARY January 2011 Priority 1 units

Site	Location	Client Reference / Number	L&L Reference	Unit Type	Original Installation Date or Modernisation Date if Applicable	DDA Compliant / costs if Applicable (k)	Modernisation / Replacement Costs (k)	Reviewed L&L Priority 1 to 5	Comments / Rationale
Bristol Royal Infirmary	Queens Bld (Lift 26)	26	CPHLF00623	Passenger	1992 Mod	30,000.00	200,000.00	1	Priority 1 action required pre hospital extension plans
Bristol Royal Infirmary	Queens Bld (Lift 21)	21	CPHLF00624	Passenger	1992 Mod	30,000.00	200,000.00	1	Priority 1 action required pre hospital extension plans
Bristol Royal Infirmary	Queens Bld (Lift 36)	36	CPHLF00627	Passenger	1992 Mod	30,000.00	200,000.00	1	Priority 1 action required pre hospital extension plans
Bristol Royal Infirmary	Queens Bld (Lift 27)	27	CPHLF00628	Bedpass	1992 Mod	30,000.00	200,000.00	1	Priority 1 action required pre hospital extension plans
Bristol Royal Infirmary	Queens Bld (Lift 39)	39	CPHLF00629	Passenger	1991	15,000.00	200,000.00	1	Lift currently only serving upper floors option to open out to serve all floors
Bristol Royal Infirmary	Queens Building - (Lift 62)	62	CPHLF00636	Goods	2000 Mod	0.00	160,000.00	1	Proposed re-grouping with lifts 23 and 28
Bristol Royal Infirmary	Queens Building (Lift 23)	23	CPHLF00602	Goods	2000 Mod	0.00	160,000.00	1	Proposed re-grouping with lifts 62 and 28
Bristol Royal Infirmary	King Edward Bld (Lift 1)	1	CPHLF00638	Passenger	1972 Etc	0.00	130,000.00	2	Subject to possible building changes
Bristol Royal Infirmary	King Edward Bld (Lift 3)	3	CPHLF00610	Passenger	1972 Etc	0.00	130,000.00	2	Subject to possible building changes
Bristol Royal Infirmary	Queens Bld (Lift 25)	25	CPHLF00635	Passenger	1965	0.00	70,000.00	2	
Bristol Royal Infirmary	Bristol Oncolgy Centre (Lift 9)	9	CPHLF00616	Passenger	Not Known	20,000.00	85,000.00	3	
Bristol Royal Infirmary	Bristol Oncolgy Centre (Lift 10)	10	CPHLF00617	Passenger	Not Known	20,000.00	85,000.00	3	
Bristol Royal Infirmary	Dolphin Hse (Lift 17)	17	CPHLF00620	Passenger	1965 Etc	0.00	75,000.00	3	
Bristol Royal Infirmary	Old Building (Lift 16)	16	CPHLF00618	Goods	1965 Etc	0.00	95,000.00	4	
Bristol Royal Infirmary	Queens Bld Pathology (Lift 51)	51	CPHLF00631	Document hoist	1960 Etc	0.00	30,000.00	4	
Bristol Royal Infirmary	Old Building (Lift 63)	63	CPHLF00630	Bedpass	1996 (2000 Mod)	15,000.00	0.00	5	Likely not required post 3 to 4 years
Bristol Royal Infirmary	Old Building (Lift 64)	64	CPHLF00631	Bedpass	1996 (2000 Mod)	15,000.00	0.00	5	Likely not required post 3 to 4 years
Bristol Royal Infirmary	Queens Building (Lift 65)	65	CPHLF00599	Bedpass	2001 Mod	20,000.00	0.00	5	
						225,000.00	2,000,000.00		

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Modernisation Solutions

a. Power unit/controller replacement packages
b. Access upgrades compliance with Equality and DDA standards
c. Aesthetic refurbishment of entrances and new car finishes change in image / identity for new tenants etc
d. Comprehensive modernisation – maximising existing space changing all but basic infrastructural components
e. Upgrade of controls for destination control or change of lift usage i.e. Evacuation Control.

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Full Replacement Solutions

Many off the shelf solutions are available from global players such as Otis and Schindler and from locally sourced suppliers who will assemble a 'package' of equipment with type tested components.

Our view is to ensure that:

a. Equipment proposed is fit for purpose
b. Any new equipment can be maintained by any competent contractor without the need for specialist diagnostic equipment

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Case Study 1 – Modernisation

Following site surveys modernisation rather than replacement was chosen for this project based upon the following criteria:-

- Traffic studies
- On-going building developments
- Access issues
- Cost saving maintenance
- Time of installation

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Case Study 1

- Existing lifts
- Manufactured by Schindler 1959 modernised by D & A 1988.
- 2 off 1275kg + paternoster
- 2.5 m/sec
- 22 stops 78mtrs travel
- Busy University building

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Case Study 1 - Solution

- Bespoke modernisation to LB specification
- Better floor to floor times
- Improved handling capacity
- Finishes approved by English Heritage
- Remote monitoring
- Energy efficient controllers and drives
- Open protocol equipment

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Case Study 2 – Full Replacement

Following site surveys full replacement rather than modernisation was chosen for this project based upon the following criteria:-

- Traffic studies / site review
- Increased traffic handling capacity requirements
- Energy efficiencies
- Costs effective
- Code compliance
- Changes in building internal use

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Case Study 2

Existing lifts

- Manufactured by H&C in 1982
- 800 kg
- 0.5 m/sec
- Direct acting hydraulic
- Duplex in busy office environment
- 5 stops 16 metres travel
- Proposed basement meeting room

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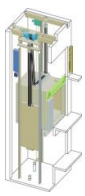
Case Study 2 - Solution

- New MRL traction lift
- 180 starts per hour
- 400,000 operations per annum
- 1m/sec



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In summary…

1. Carry out a "Lift Test" by surveying your asset to EN81-80 (Rules for the improvement of safety of existing passenger and goods passenger lifts)
2. Conduct an audit of your lift stock – establish where the real issues/costs are. Substantiate risks and prioritise accordingly
3. Decide on the priorities and what you are looking to achieve, put yourself in the tenants shoes
4. Seek professional advice to work through the 'real' options and set time frames and budget
5. Consider the long term benefits i.e. improved reliability, reduced energy consumption, aesthetically pleasing etc.

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3. Contract Document

Managing lift & escalator maintenance starts with setting the requirements between the Client and Contractor…

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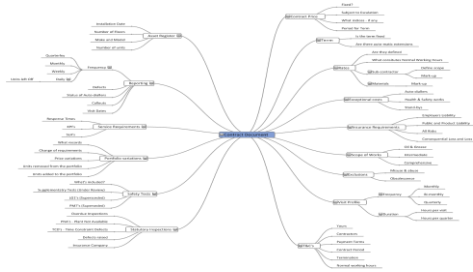
Factors to consider



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Contract Term

- Fixed Term
  - 1 Year
  - 3 Years
  - 3 Years with an option to extend
- Automatic Renewals
  - Standard contracts from the industry usually include rollover clauses

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Contract Format – Scope of Works

- **Standard** – basic – Oil & Grease - Bronze
  - Routine servicing only, parts, materials or repairs excluded. All Callouts Chargeable.
- **Intermediate** – Standard Plus – Silver
  - Callouts included, parts, materials or repairs excluded
- **Comprehensive** – Gold
  - Callouts, parts and repairs
- Exclusions could apply
  - Misuse, Obsolescence, Out of Hours

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Terms & Conditions

- Yours
- Contractors
- Payment Terms
- Contract Period
- Termination
- Insurance requirements
  - Employers Liability
  - Public and product Liability
  - All Risk
  - Consequential Loss and Loss of profit
- Working Hours

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Costs

- Contract Price
  - Fixed for the term
  - Subject to escalation
  - What indices – LEIA, RPI, CPI
- Additional Works
  - Rates – Normal and Out of Hours (defined)
  - % addition materials
  - % addition Plant, Subcontractors
- Future works (Stand-by, Auto-diallers, Health & Safety)

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Maintenance Regime

- Frequency
  - Monthly
  - Bi-monthly
  - Quarterly
- Duration
  - Hours per visit
  - Hours per quarter
- Prescriptive – Detailed instructions
- Non Prescriptive – Performance based

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Service Requirements

- SLA's
- KPI's
- Response Times
  - Trappings
  - Normal working hours
  - Out of Hours

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Asset Register

- Number of units
- Make and model
- Number of floors
- Installation date
- Key dates – Safety Tests, Lolers, Risk Assessments
- Portfolio variations:
  - Units added
  - Units removed
  - Upgrades and renewals

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Safety Tests

- PM7's (Superseded)
- LG1's (Superseded)
- Supplementary Tests (Under Review)
- What's included?
- Current records

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Reporting

- Visit Dates
- Callouts
- Status of Auto-diallers
- Defects
- Frequency
  - Daily
  - Weekly
  - Monthly
  - Quarterly

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Statutory Inspections

- Defects raised
- TCDs - Time Constraint Defects
- PNAs - Plant Not Available
- Overdue Inspections
- What records are kept
- Inspection Agency (arrangement, performance)

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Managing the Contract

- Contractor performance
  - Maintenance frequency and duration
  - Maintenance quality
  - Callouts, reliability, downtime
  - Loler defect resolution
  - RAMS (Risk Assessments Method Statements)
  - Safety Test
- Costs
  - Invoices – Covered by the contract?
  - Quotations – Correct value?
- Records
  - Lolers, RAMS, Safety Tests, Quotations, Invoices

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Summary

- Lift codes are changing
  - New lifts or replacements from 2017 will have additional requirements
  - No current change to modernisation requirements.
- Modernisation / Replacement
  - Prioritise works on the basis of data from audit.
  - Register of assets vital to decision making.
- Management of lift maintenance
  - The contract document is at the core.
  - There is benefit in tailoring a contract specific to your needs.

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Thank you.

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