Inspection Firms for Examination, Inspection and Testing of Lifts and Escalators

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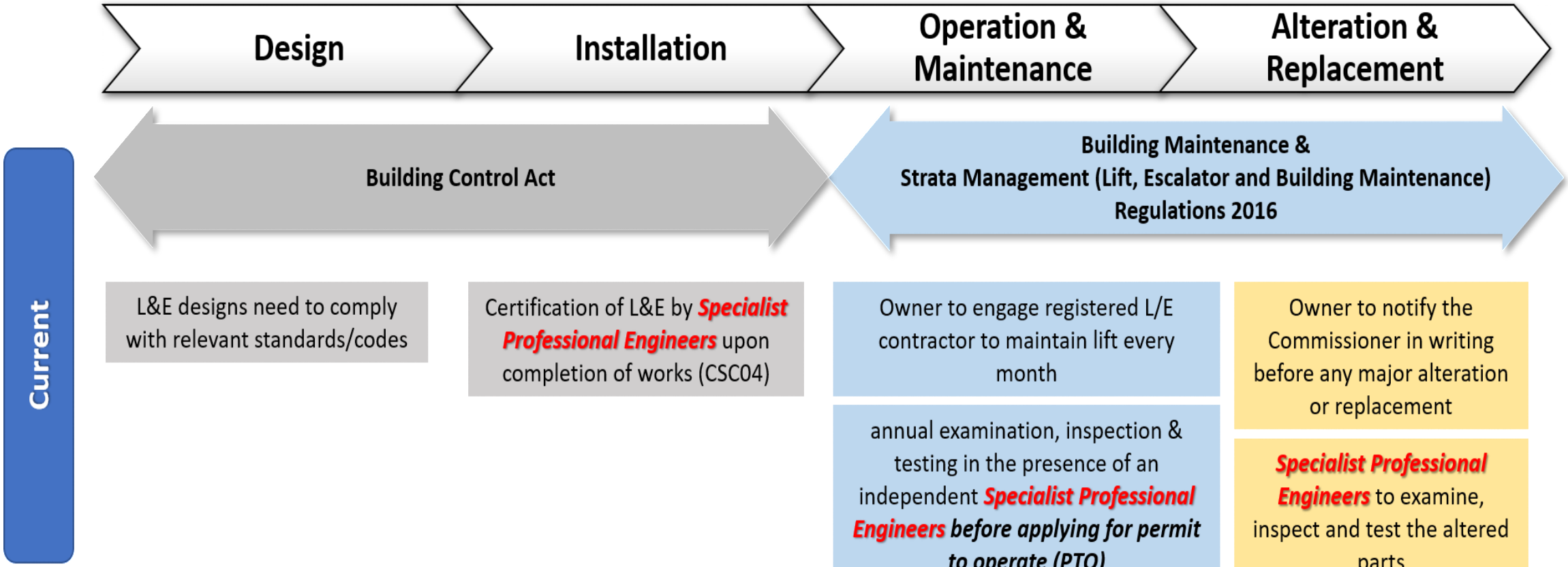
The Current Lift and Escalator (L&E) Safety Regime



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Challenges Ahead

1) **Number of L&E in Singapore is expected to grow at 2-3% per year**
2) **Low growth of new SPE (L&E) to augment the pool of SPE to meet current and future demands for examination, inspection and testing (EIT)**
3) **L&E are getting more sophisticated and complex**
   a) Greater prevalence of more sophisticated equipment, such as Twin Lifts, Double-Decker Lifts, high-rise, or high speed lifts

   Hence, greater need for in-depth cross discipline knowledge in both mechanical and electrical engineering

4) **Limited technical growth and transfer of knowledge in the industry**

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Proposed Lift and Escalator Inspection Regime

Individual SPEs

- Current practice of examination, inspection and testing of L&E by individual SPEs

Lift and Escalator Inspection Firms (LEIF)

✓ **Well-structured professional inspection firms that produces desired outcomes for the industry**

- ❑ Sufficient inspectors to meet EIT demand
- ❑ High-quality inspection outcomes
- ❑ Well rounded engineering knowledge
- ❑ Organic technical growth and transfer of knowledge

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Accreditation to International Standards

LEIFs are to be accredited to ISO/IEC 17020 Conformity Assessment

Inspection scope, method, procedures, issuance of standardized inspection reports

Technical capabilities required (e.g. expertise in both mechanical and electrical discipline)

Training and development programme for inspectors

Organisation structure and Manpower

- ✓ Better professional image and international recognition
- ✓ Strong technical competence of people and processes
- ✓ Reliable results
- ✓ Trust and customer satisfaction

With Accreditation

Note:

ISO/IEC 17020 Conformity Assessment is the international standard for accreditation of Inspection Bodies (IB)s

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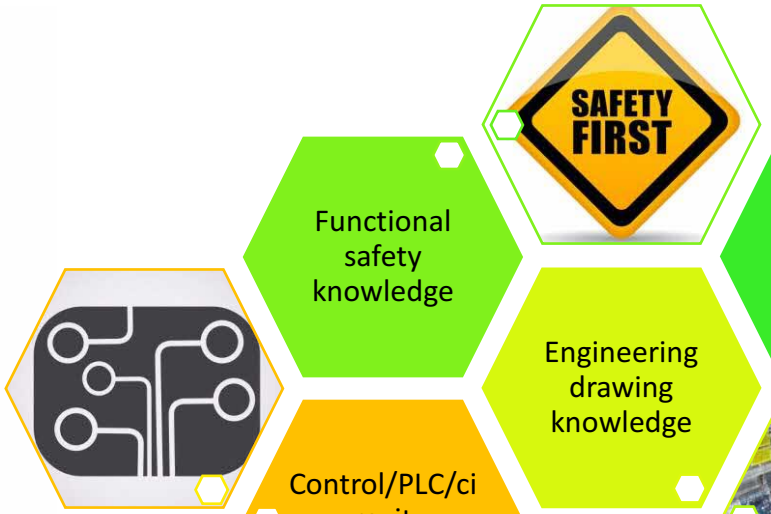
All-rounded Competency And Capability

LEIFs can build all rounded competency including strong technical knowledge in fields of Mechanical and Electrical/Electronic Engineering, and relevant industry specific knowledge



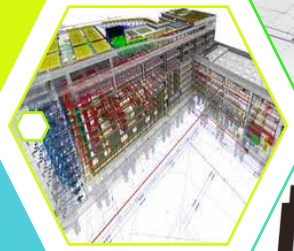
Functional safety knowledge

Design knowledge

Relevant legislative requirements

Engineering drawing knowledge

Control/PLC/circuit interpretation



Relevant codes and standards

FMEA/Risk analysis knowledge

Lifting/ Hoisting knowledge

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Lift and Escalator Inspectors

LEIF can engage LEIs to carry out EIT

- ❑ Well trained and skilled
- ❑ Certified by IES/ACES/BCA Joint Accreditation Committee (JAC) and registered with IES

- ❑ Can carry out inspection unsupervised

Note:

- *IES stands for The Institute of Engineers*
- *ACES stands for Association of Consulting Engineers*

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Technical Growth & Knowledge Transfer

LEIFs are well resourced to invest in training for sustainable growth and staff career progression

- ✓Structured and systematic training for capability building and knowledge transfer
- ✓A sustainable growth environment and opportunity for continual upskilling for technical growth

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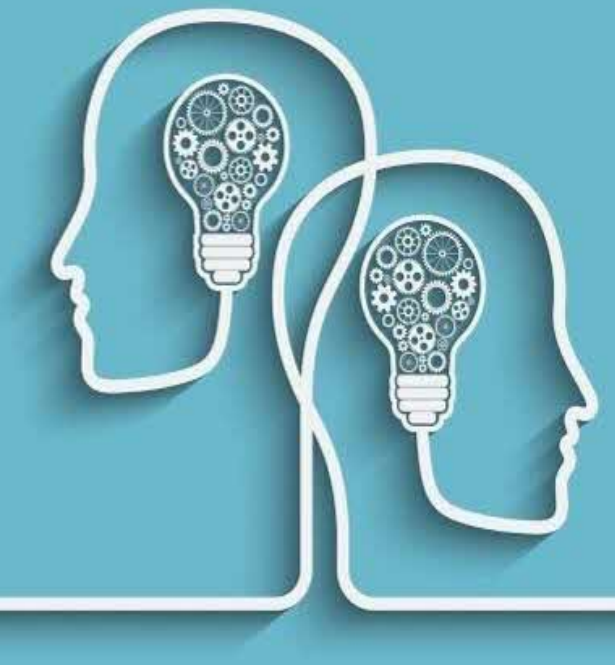
Adoption of Technologies For Innovation and Productivity

LEIFs are better positioned to invest in innovation and technology adoption to improve productivity and effectiveness

- ✓Remote EIT
- ✓Advanced tools in EIT (e.g. electromagnetic inspection of wire ropes) for enhanced accuracy



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Benefits of a Lift and Escalator Inspection Regime

Well structured professional firms with **sufficient inspectors for EIT**

Provides service buyers with **standardized and high quality EIT works**

Comes with **all-rounded competencies** to better deal with possible technical and engineering challenges ahead

Provides **technical growth and knowledge transfer** for its staff for **good career progression**

Well positioned to **invest in technology** for innovation and productivity

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Thank you

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