

# The New Zealand LIFT FAX

The New Zealand Lift Fax is produced bi-monthly for the NZ lift industry. Just send your email address to LEC to subscribe.

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05/2008

## WHAT'S GOING UP or DOWN THIS MONTH:

### T.L. JONES DEPARTS NZ:

The writing was on the wall! TLJ Microscan grew out of Kiwi ingenuity and the enthusiasm and efforts of those who aspired to achieve, only to be sold off to the highest bidder, and gradually that enthusiastic spirit was lost to the financial globalization of industry practices, with that spirit now only remaining a memory.



TL Jones is not gone, only departed to Australia, India, China, California and elsewhere in the Global financial either, much like the other citizens of broken Christchurch NZ, where the seed of the idea was originally sown. Not to worry, it's still selling more product than ever and diversifying into new markets, but this unique product that was once locally renown, has been swamped by the plethora of global look-

alikes, even in its hometown of Christchurch. **Free call 0508 886 889**  
**CLOSURE 31<sup>st</sup> Aug 2012**



**CHRIS WOODMAN**  
General Manager  
TL Jones



## EDITORIAL:

### HAVE WE LEARN'T ANYTHING?:

It is now nearly three years since the lift installation accident at Fonterra Edendale in Southland where we lost one of our industry senior technicians, and so I was thinking it timely to find out what if anything had we learnt from this accident, and whether or not any changes have been made by those responsible for process or procedure to lessen the chance of it happening again.

The main identities able to make changes were the manufacturer and lift contractor Otis Elevators Co Ltd; the Property Managers Fonterra Edendale who took over the site, and the Safety investigator; the Department of Labour. The other party who could make recommendations was the Coroners Department, but only where in the public interest such comment was likely to reduce the chances of a reoccurrence.

The main comments the Coroner David Crerar made in his deliberation were:-

1. That the safety guard rail on top of the lift employed as a safeguard against falling effectively created the cause of death, and therefore fitting of any such guard should always be critically assessed.
2. That as the lift brake was identified as being able to freeze on the disc and designed only to be released electrically, a mechanical means of release may be appropriate to be considered.

The respondents after one year since the coroners report had the following to say on this request:-

Otis Elevator Co.Ltd:

*Otis does not wish to be referenced in your Newsletter – thanks.*

Property Owners Fonterra Edendale:

*No response.*

The Department of Labour:

*The Labour Group of the Ministry of Business, Innovation and Employment (MBIE) regularly reviews its health and safety investigation processes to ensure effectiveness. However, there were no particular issues raised by this incident that required any change to our processes.*

And that about sums it up. Anecdotally I have heard that Forterra now requires 2 lift maintenance persons to attend when on site, and that Otis were looking at their brake compound, but who cares? Ed.

## PALEA NEWSLETTER NO.6:

The Pacific Asia Lift & Escalator Association has issued their July 2012 Newsletter which updates the results of the forum held in Feb-March throughout Asia-Australia & NZ and looked at the coming **EN81-20**, the update soon to be released to EN81 Parts 1&2:1998.

Click on the PALEA logo below:- or [www.palea.org](http://www.palea.org)



**PACIFIC ASIA LIFT AND ESCALATOR ASSOCIATION**

## TECH ELEVATORS LTD:

**Kim Pederson** spent 15 years with Otis as a serviceman in Christchurch ending up as GM for Otis in Papua New Guinea.

In 1999 Kim setup Tech Elevators Ltd in Napier beginning with Service work and expanding into water hydraulic platform lifts, scissor lifts, wheel chair hoists, drum drive dumbwaiters and domestic lifts.

Being able to manufacture his only control systems and write his own software, he uses CAD for his lift designs.

He is also an agent for **IGV** hydraulic drives

**ACORN** and **ACORN**  
STAIRLIFTS stairchairs.



You can contact Kim at:-  
Tech Elevators Ltd

P.O Box 869, 69 Niven Street, Napier. Ph: **06 843 6010**

## OFFICIAL NZS4334:2012 Release:

Standards New Zealand has published a new Standard for Platform lifts and low-speed lifts, NZS 4334:2012. Users of the Standard include councils, designers, architects, engineers, building owners, and lift manufacturers. The lifts described in NZS 4334 are suitable in domestic and public buildings for low-rise, low speed, and low use applications. The Standard will provide uniformity of approach for the installation of platform lifts.



NZS 4334 aims to help New Zealanders by ensuring that the lifts are safe and fit for purpose. It is expected that these lifts will be most frequently used by those persons with reduced mobility that have difficulty negotiating stairs. The Standard provides the specifications to build and maintain New Zealand Building Code (NZBC) compliant platform and low-speed lifts for both domestic and public settings. NZS 4334 is intended to complement the existing Standards for mechanical installations for access; NZS 4332:1997 Non-domestic passenger and goods lifts and BS EN 81 Parts 1 and 2, which are referenced in the NZBC Compliance Document D2 Mechanical installations for access.

Platform and low-rise lifts are becoming more popular in houses and small buildings where a commercial lift is not warranted. These lifts, built to NZS 4334, provide a safe, easy-to-use, and practical solution.

**THE COMMITTEE reps:**  
CCS Disability Action  
DBH (now the MOI&E 2012)  
Disabled Person Assembly  
IPENZ  
Low Rise Elevators Suppliers  
Association.  
MOEducation  
MOHealth  
RNZF of the Blind

### **The Standard:**

- specifies requirements for platform lifts and low-speed lifts that are installed in a new or existing building and that provide access to and within the building
- limits lift speed and travel distance to reduce potential hazards and enable Building Code compliant lifts to be built without all the features, and therefore cost, of lifts complying with NZS 4332 or BS EN 81 Parts 1 and 2
- is expected to replace the existing Rules for power lifts not exceeding 750 watts (less than one horsepower) as an up-to-date reference in Acceptable Solution D2/AS2 in the NZBC Compliance Document **D2 Mechanical installations for access.**

NZS 4334 was developed by an expert committee using a consensus-based approach. This included widespread consultation, review by industry experts, and public input.

## DBH BECOMES PART OF THE MINISTRY OF B,I&E:

Never mind, it's just another change of structure, department names etc in the guise of efficiency and cost savings to keep you guessing and the players on their toes! The Department of Building & Housing has been amalgamated into the **Ministry of Business, Innovation and Enterprise**, sorry **Employment**.

It could have been enterprise, but no it's not, so just forget my fophar, but remember the new **MOBIE . . . dick!**  
Oops I've done it again, but you should now remember it!

## IEC Comment on NZS4334:2012:

In July 2012 a new NZ Standard for lifts was issued to cover **Platform and Low Speed Lifts.**

As the name suggests the Standard covers:-

### **Low Speed Lifts**

(max speed-0.3m/sec  
max travel 15m).

### **Platform Lifts**

(max speed 0.15m/sec  
Max travel 3.6m)

### **Stairlifts & Inclined Lifting Platforms.**

(max speed 0.15m/sec)

From my point of view, the most notable oversight is that Dumb Waiters (section 13 Service Lifts) of the old **Under 1HP code** (D2/AS2), was not included. If it had been it would have made this Standard a single more comprehensive replacement for this expanding area of the lift industry.

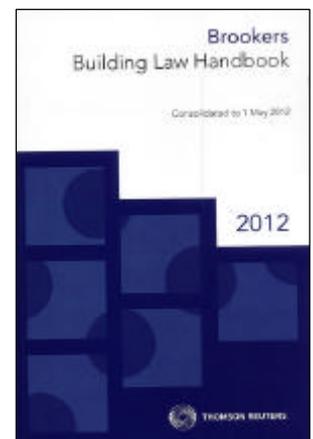
Clause 4.1.4 regarding car platform sizes nearly excelled itself by identifying recommended sizes, except for clause 4.1.2 regarding Public platforms, where it still required the obsolete 1.4m x 1.4m minimum lift floor size solution. That aside, my first read of this final compilation has little need for further comment, other than it was much needed and provides a document on which the NZ lift industry can adopt as a sound yardstick for considering Building Act D2 solutions in this area.

**Otherwise a worthy addition to you library.** Ed.

## BROOKERS BUILDING LAW HANDBOOK:

If you are struggling to keep abreast of the Building Act in NZ and its many changes, the latest comprehensive publication that compiles many aspects of these changes has been incorporated into the **Brooker Building Law Handbook**, issued 1<sup>st</sup> May 2012.

Since issue of the 2004 Act there have been four amendments, and all these have been included into this latest publication.



### **Chapters:-**

1. **The Updated Building Act 2004.**
2. **The Updated Building Regulations.**
3. **Construction Contracts Act 2002.**
4. **Construction Contracts Regulations.**
5. **Weathertight Homes Resolution Services Act 2006.**
6. **Weathertight Homes Resolution Services Regs 2006.**
7. **Canterbury Earthquake response & Recovery 2011.**
8. **Appendix – Building Amendment Bill No.4 2011.**
9. **Table of Statutes and Regulations.**
10. **Subject Index.**

**Contact** Building networks for a shipped copy in NZ - \$95  
[www.buildingnetworks.co.nz](http://www.buildingnetworks.co.nz)

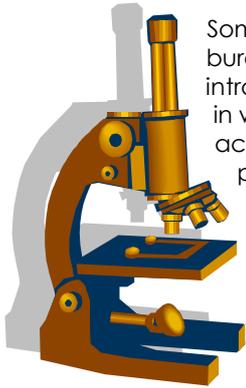


### **Contents:-**

<http://www.buildingnetworks.co.nz/products/product-category/survey-official/>

## COUNCIL DOCUMENT AUDITS:

Another double first for the local Council has been a follow-up to a building owner Consent Completion Notification by requesting an outstanding independent D2 inspection of a new lift installation, and then by a subsequent follow-up questioning the suitability of documents submitted.



Some might initially see this as excessive bureaucracy, but after 20 years since introduction of the Building Act into NZ and in working with the lift industry to try and achieve a simple, relevant and consistent process to D2 lift compliance inspection and documentation in NZ, seeing an audited process emerge should at last bring this consistency.

It is this subtle change from Councils evolving from being expert at every building solution to being expert administrators of building processes which includes an audit that sees a positive change, even if it has taken 20 years to become evident.

## MULTIPLE USE APPROVAL:

A facet of Building Amendment Acts that have evolved since 2004 has seen the additions of **Clause 30A to H** in February 2010 that identified a **National Multiple Use Approval** process.

For those producing generic designed small lift products this may be a way for improving on the **LEC D2 PS2 Peer Review Statements** issued following a review by LEC of a specific supplier product and document process.

This LEC process has enabled some local manufacturers to issue these statements along with their proposed solution documentation to local Councils as a D2 design submission for Consent approval.

The **National Multiple Use Approval** is a similar process whereby a manufacturer provides suitable documentation in a formal application to the DBH requesting a product or process be considered as Building Code Compliant for National Multiple Use Approval. A Multiple Use Approval may include a **waiver** or **modification** of the Building Code, but can also include restrictions for application or use.



An application for Multiple Use Approval must include:-

1. be made in writing.
2. be given , in the prescribed form and manner.
3. contain the prescribed information.
4. be accompanied by plans & specifications.
5. be accompanied by a list of any specified systems that require a Compliance Schedule.
6. be accompanied by any information the chief executive reasonably requires.

To gain more information on this option, read clauses 30A to G in the Building Act or go to:-

<http://www.dbh.govt.nz/nmua-update-3>

## CERTIFYING YOUR NEW LIFT:

LEC has been associated with most of the small lift suppliers in New Zealand trying to assist them over the years in producing a consistent D2 certification process to enable their solutions to meet compliance under the Building Act. Any type of **D2 Means of Mechanical Access into a Building** is classed as a **SPECIFIED SYSTEM** and needs to go through the Building Consent process before installation and use, both domestic and commercial.

The main obligations on lift suppliers big and small consists of four main Consent stages:-

1. You need to establish compliance of the proposed lift solution **design** to obtain Building Consent approval. (No site work should begin until the Consent Approval is issued by the Council).
2. Where requested by Council, you need to engage an independent lift design reviewer able to issue a **D2 PS2** for confirm Consent Approval.
3. Once the approved solution is installed, compile a suitable **D2 PS3** to confirm the solution has been installed to the Consented approval, identify any variations and compile a suitable document record. (Commercial buildings require ongoing maintenance and WOF checks to be identified).
4. Engage or ensure an Independent inspection and test is satisfactorily completed and suitably documented to enable a **D2 PS4** to be issued and the **Code of Compliance Certificate** or for low risk buildings a **Consent Completion Certificate** (still to be implemented) to be issued.

**Each of the above stages requires specific documentation to be produced for different types of D2 solutions. ie.**

### 1. Design:

- a. The standard / code or Acceptable Solution the lift is proposed to achieve.
- b. Independent test authority certificates or mechanical calculations confirming the suitability of the design.
- c. **D2 PS1** Engineers calculation or certificate confirming the suitability of the building to support the design plus earthquake loadings.
- d. A **D2 BCode** solution performance assessment.
- e. A layout drawing of the solution.
- f. A completed lift particular sheet.

### 2. Peer Review:

- a. A council should call for a **D2 PS2** peer review from an independent assessor where it does not have suitable expertise to assess the solution.

### 3. Installation Completion:

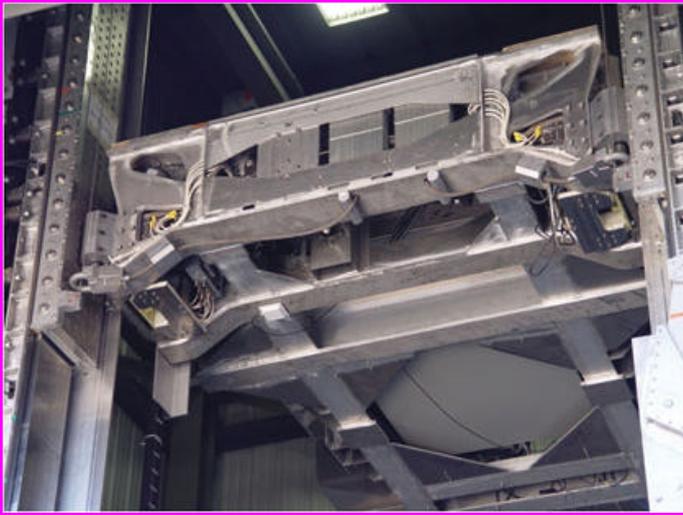
- a. As-built drawings & schematics.
- b. A copy of the commissioning check list.
- c. A copy of any applicable rope/belt certificate.
- d. A copy of a buffer certificate.
- e. A copy of any entry fire rating certificates.
- f. A copy of any site structural welding certificate.
- g. A copy of any hydraulic pressure certificates.
- h. A copy of the electrical compliance certificate.
- i. A copy of any special glazing certificates.
- j. Commercial – identify applicable SS8 or supply the recommended maintenance frequency and annual WOF check-list.
- k. A **D2 PS3** confirming the lift was installed to the approved design.
- l. Where a **new type of equipment** is to be installed, certification of Machine, control panels, door locks, safety gear, entry doors, governors, buffers, hoist ropes, governor ropes and any fire rating certificates need to be established.

### 4. Independent Testing:

- a. The Consent Approval should identify a requirement for independent inspection and testing of the completed installation for a **D2 PS4** to be issued.

## LINEA INDUCTION LIFTS:

If there was to be an evolution in lifts, the concept of using a Linea synchronous electric motor (LSM) was a likely advancement, but it was always to be technically challenging to be able to employ a Linea induction synchronous motor to lift and control a load vertically, both up and down.



We should all be familiar with the advances in solid state drives employing frequency control of the simple rotary AC motor, as well as the high-speed horizontal railway employing magnetic propulsion systems, but to employ these principles to go safely vertically up and down added a few more challenges.



The Linea synchronous induction motor in Maglev trains employs a permanent magnet rotor and controllable dynamic field stator like the standard rotary motor, only the stator it is rolled out as a flat track, and the permanent magnet rotor is formed into the carriage that runs on the track.

It seems the US Navy has also been inspired to search for a simple innovative electric powered solution for its many uses of differing forms of power on board its atomic powered fleet of ships. These require high control of powerful complex machines, where a malfunction can be catastrophic or even life threatening.

Its massive aircraft carriers require huge maintenance teams and spare parts to keep the many electro-mechanical, automatic and electronic controlled aircraft lifts and catapults it employs to function in optimum readiness and serviceability.

This equipment combines hydraulics, steam, rotary electric drives, pneumatics, and sophisticated dynamic electronic controls, mostly employed in harsh environments, and so to

be able to employ a simple, reliable, highly controllable electric means of propulsion for many applications including vertical travel, the electric Linea induction synchronous means of propulsion ticked many boxes. One of the most challenging needs was for the large powerful lifts that transported people and planes between decks of the Carriers, and its this technology of course that could be employed to revolutionise the lift industry.



The vertical Linea Induction synchronous motor brings the following advantages to lift design:-

- Travel is limited to only the length of the guiderail.
- The drive is contained in the guiderails and car.
- Multiple cars can be used in the same shaft with anti collision controls thereby reducing building footprint needs or more rentable space.
- Any single car can run independently to others and can traverse vertically as well as horizontally or inclined.
- Redundant flexible guide mechanical safety gear can be employed to hold the car when stationary or slow and stop the car through loss of power or overspeed.
- Ultimate speeds can be faster for longer travel.
- There is no requirement for a counterweight.
- There are no requirements for hoist ropes or pulleys.
- Solutions can be more environmentally friendly.
- Inductive power transfer is used to charge onboard power storage for lighting and communication.
- Lower maintenance cost and frequency with a higher operational reliability.
- Extending travel possible with minimal disruption.
- Flexible use to goods only platforms for automatic transport of material long or short distances. eg. Space elevators or parking garages.
- Change of direction and switching of cars possible as for auto people movers.
- Multiple drives can be fitted to the same car for increased loading applications.



See [www.magnemotion.com](http://www.magnemotion.com) for technical development details or <http://military.federaquipment.com/node/60> for the Advanced Weapons Elevator.