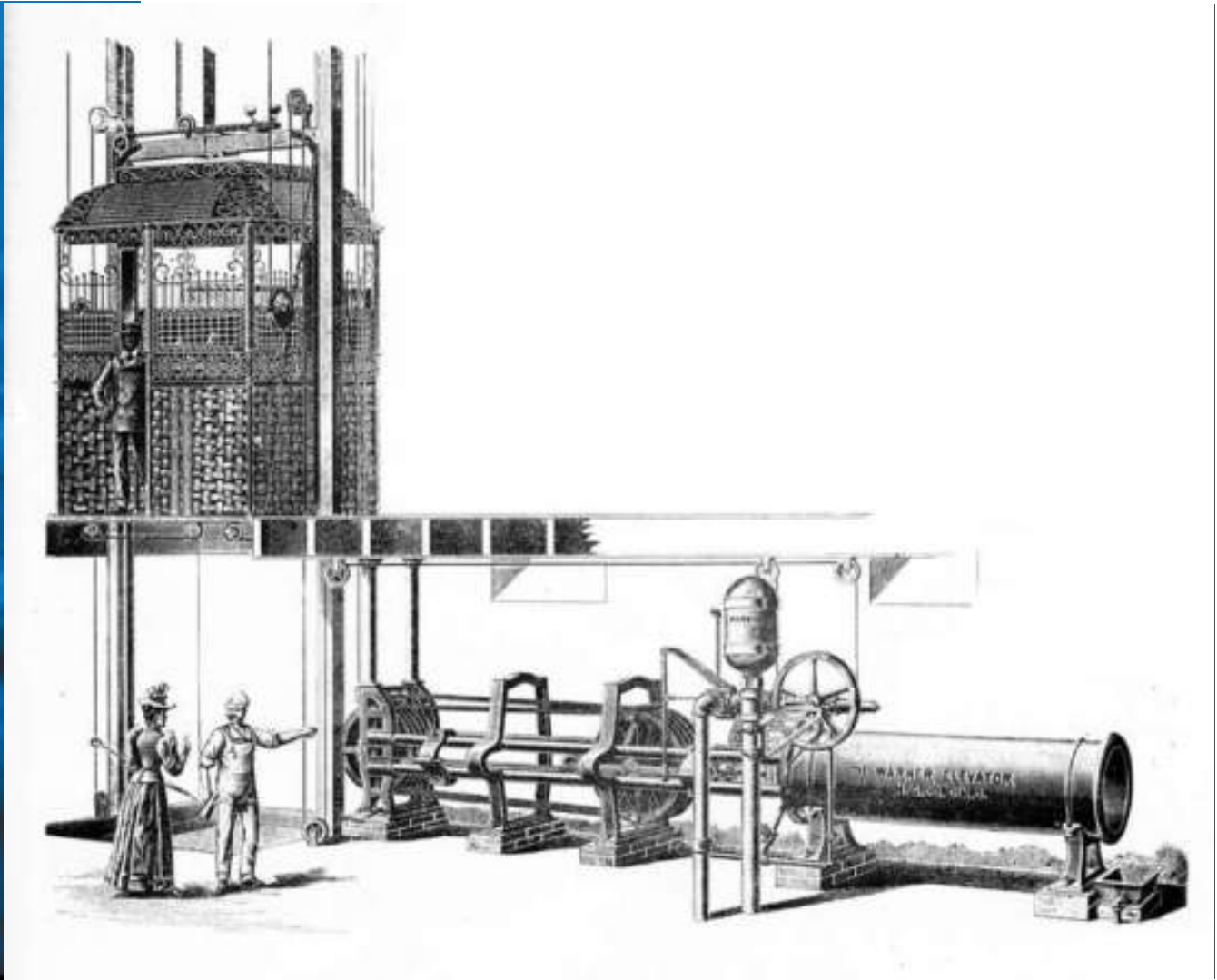


# Characteristics and potential of the lift modernisation market



ELA general assembly



# VDMA Trade Association for Lifts and Escalators

## The leading German lift association

- VDMA represents (2007):
  - Industry turnover EUR 193 billion
  - Largest employer 935,000 employees (+ 5 %)
  - Strongest industry representative 3,000 members
- Trade Association of Lifts and Escalators (FV AuF)
  - New installations (2006): 10,000 lifts
  - Repair (2006): EUR 250 million
  - Modernisation (2006): EUR 210 million
  - VDMA-FV AuF represents the leading German manufacturers of lifts, escalators and components, and represents their interests

# The German modernisation market

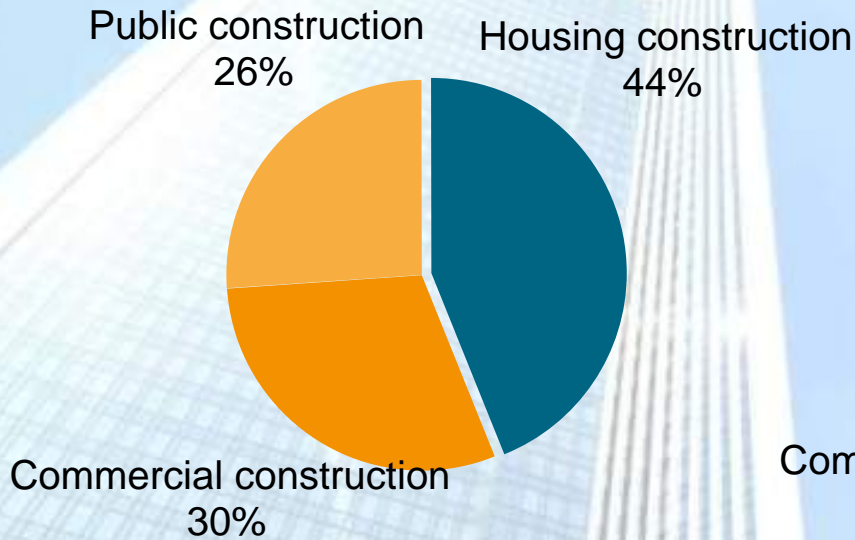
## Aim of this presentation:

- Presentation of the German modernisation market with the help of some key figures
- Influence of legislation on the modernisation of lift installations in Germany

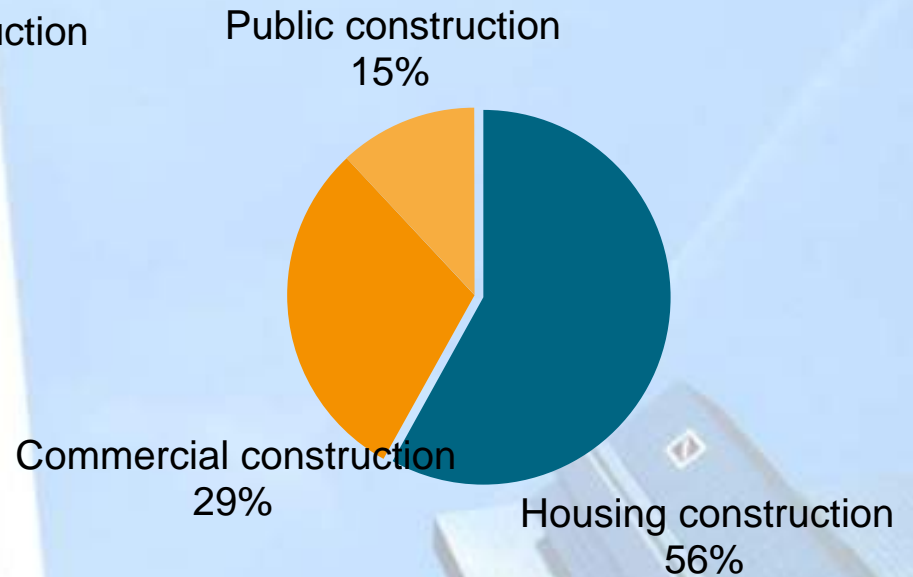
# The German construction sectors

## Shares of the construction sectors

1970



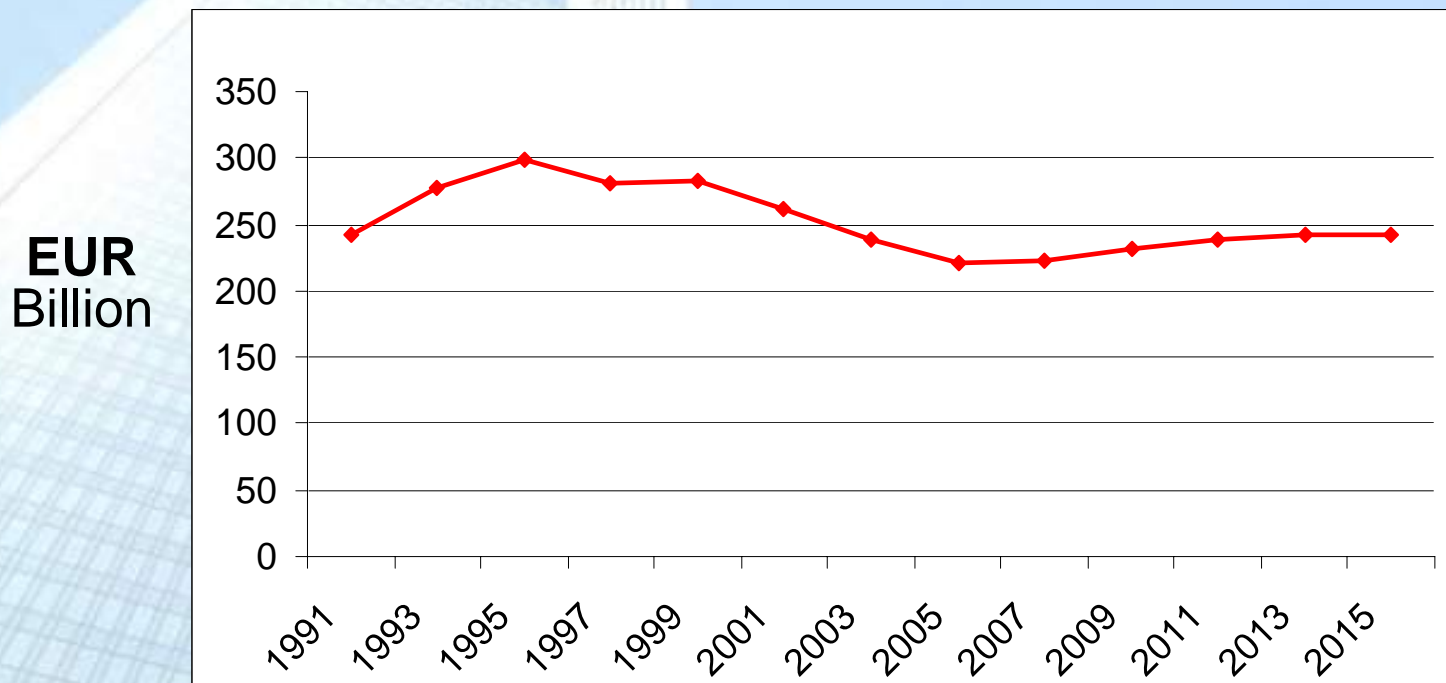
2006



Source: Federal Statistical Office

# Development of the building industry

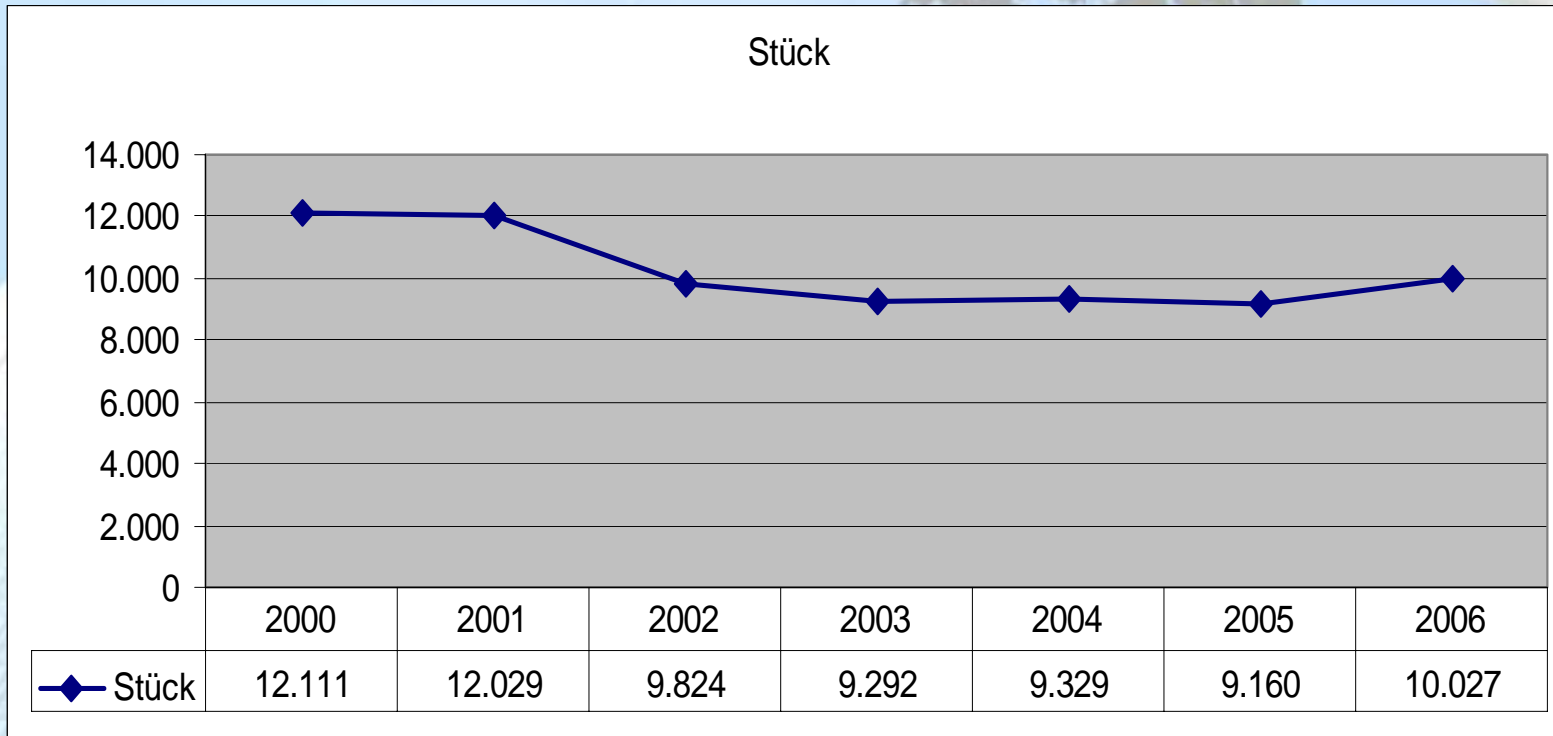
## ifo projected construction in Germany 1991-2015



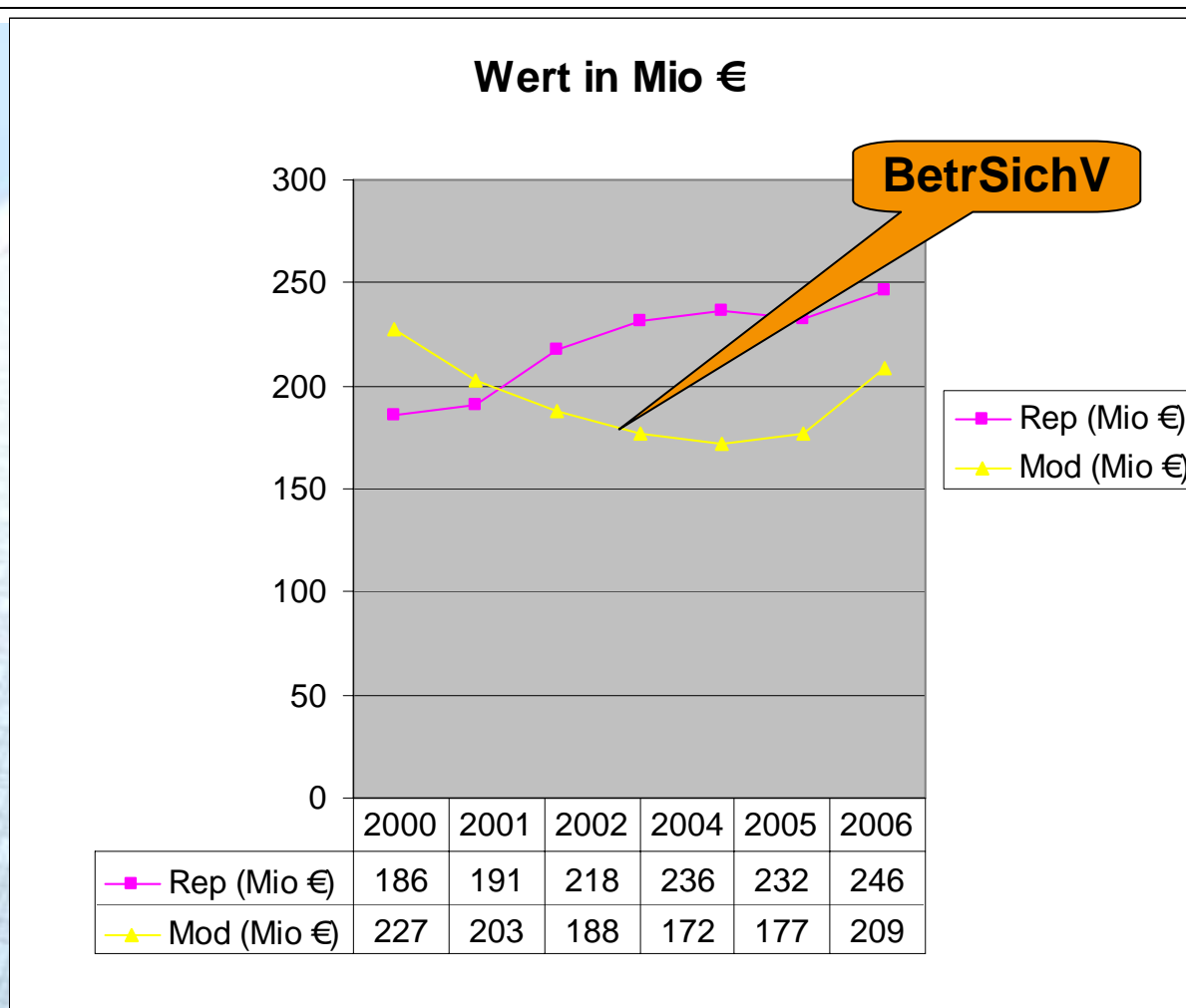
# Orders received for lifts 2006

	2005	2006	in %
<b>Units</b>	9,160	10,027	9
<b>Repair (TEUR)</b>	231,692	245,678	6
<b>Mod. (TEUR)</b>	177,325	208,892	18

# Development of orders received for lifts, quantity 2000-2006



# Development of new installations/repair and modernisation (value in EUR million)

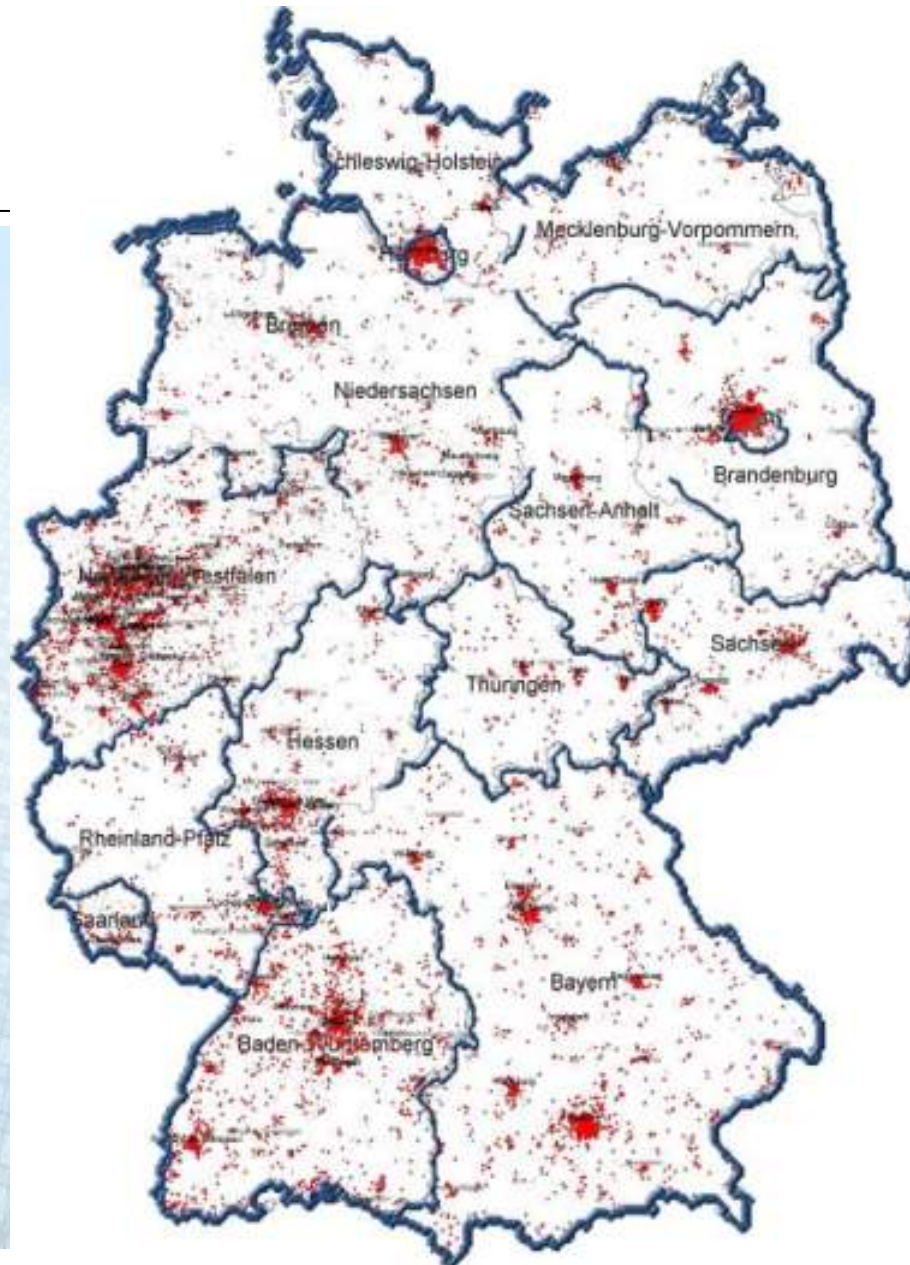




**Regional  
distribution of  
lift  
installations**

**=**

**Map for  
modernisation**



# Modernisation market in Germany

## 1st conclusion:

- The quantity of lift installations in Germany is approx. 650,000 installations → 50% are more than 20 years old → need for modernisation
- The increase in lift installations in the residential building sector will have a positive effect on the modernisation market
- The positive development of the building industry will generate the need for new installations, but also the need for modernisation
- The German Ordinance on Industrial Safety and Health appears to have stimulated the need for modernisation

# Legislation stimulates modernisation

But how?



Well, with the Ordinance on Industrial Safety and Health...

## Legislation stimulates modernisation

### The situation in Germany:

- There is no obligation to modernise lifts, but...
- Since the end of 2002, the German Ordinance on Industrial Safety and Health (BetrSichV) has required that:

## BetrSichV - Initial position

- The operator must ensure that the lift is operated in accordance with the state-of-the-art (operator's responsibility)
- The operator must carry out a hazard assessment or safety evaluation for his installation
- “An installation requiring supervision must not be operated if it presents defects which could cause a hazard (to people).” (§ 12 para. 5 BetrSichV)
- “Operation” includes repair and maintenance, as well as modification (= modernisation)
- Necessary repair and maintenance work must be carried out promptly
- In the event of modifications or substantial changes, the state-of-the-art must be observed for the modified parts of the installation

## Modification Checklist - The German modernisation model

- For more than 5 years, a Modification Checklist (“Umbaukatalog”) has existed for lifts - definitively developed by VDMA members
- The basis of this Modification Checklist is EN 81-1/2
- The Modification Checklist was published in the Federal Labour Gazette (“Bundesarbeitsblatt”) → therefore it has an official character
- The aim of the Modification Checklist is to describe the safety measures that must be complied with during modification and modernisation, in order to achieve the state-of-the-art
- The same applies for a Technical Rule on Industrial Safety (TRBS) 1121 for modifications and substantial changes to lift installations
- Further Technical Rules on Industrial Safety are currently being developed - VDMA is the decision-maker for lifts

# Modification Checklist - Example

1	Schacht	Anforderungen	Änderung im Sinne der BetrSichV § 2 Abs.5 Satz 1	Sicherheitstechnische Instandsetzung im Sinne der BetrSichV 2 Abs.5 Satz 2	Wesentliche Veränderung (→ erneutes Inverkehrbringen)
1.1	Versetzen einer kompletten Aufzugsanlage		nein	nein	ja
1.2	Änderung des kompletten Schachtes		nein	nein	ja
1.3	Änderung/Erneuerung der Schachtwände (Zugänge)	Ausführung nach Ziffer 5.2, 5.3 (ausgenommen 5.3.3), 5.4, 5.6, 5.8, 5.9, DIN EN 81-1/2:A2:2005 Ziffer 6, Abstände nach Ziffer 11.2 Umwehrung auf dem Fahrkorb entsprechend den Abständen nach Ziffer 8.13.3 Grubenabstieg nach Ziffer 5.7.3.2 (wenn Änderungen im Schachtgrubenbereich)	ja	nein	nein
1.4	Änderung der Schachtdecke (Schachtkopf)	Ausführung nach Ziffer 5.2 - 5.3 sowie Zutreffendes von Ziffer 5.7 - 5.9	ja	nein	nein
1.5	Änderung des Schachtbodens (Schachtgrube)	Ausführung nach Ziffer 5.2 - 5.6 sowie Zutreffendes von Ziffer 5.7 - 5.9	ja	nein	nein
1.6a	Änderung durch Aufstockung		nein	nein	ja
1.6b	Änderung durch Abstockung	Ausführung nach Ziffer 5.2 bis 5.9 soweit zutreffend + Umwehrung auf Fahrkorb entsprechend den Abständen nach Ziffer 8.13.3 soweit zutreffend	ja	nein	nein

# The German route to modernisation

1. The operator wants to modernise his installation:
  - BetrSichV requires modernisation according to the state-of-the-art → legal obligation
  - If he carries out the modernisation according to the Modification Checklist or TRBS 1121, the state-of-the-art is considered to be fulfilled
2. The operator performs hazard assessment according to BetrSichV:
  - If safety defects are identified during the hazard assessment, these must be rectified
  - If a modification to the installation is necessary for this purpose, this must be carried out in accordance with the Modification Checklist or TRBS 1121

Therefore, the VDMA has issued the following recommendation to all lift operators:

## Retrofitting - VDMA recommendation

1. Performance of a hazard assessment - preferably on the basis of DIN EN 81-80
2. Examine the result and discuss possible solutions with your lift manufacturer or maintenance company
3. Rectify any serious safety defects present immediately
4. Plan the necessary investments for all further points, as applicable
5. Modernise your lift installation as soon as possible! Safety should always take priority
6. Only rely on qualified specialists for maintenance and modification, who work on the basis of DIN EN 13015
7. A new inspection may be necessary after structural modifications in the area of the lift installation or technical modifications to the lift installation

# Improving the safety of existing lift installations



## Verbesserung der Sicherheit bestehender Aufzugsanlagen

### Stand der Dinge

*(Text partially illegible)*

- ca. 100.000 Aufzugsanlagen
- davon ca. 100.000 Aufzugsanlagen, die über 10 Jahre alt sind
- die sich im schlechten Zustand befinden
- die keine in Deutschland gültigen Normen erfüllen können

Der VDMA hat eine Reihe von Maßnahmen ergriffen, um die Sicherheit bestehender Aufzugsanlagen zu verbessern. Dies wird durch die VDMA-Initiative 'Verbesserung der Sicherheit bestehender Aufzugsanlagen' erreicht.

### Wichtig für den Betreiber

- Die Betriebsbetriebsanweisung ist ein zentraler Bestandteil der Sicherheitsbewertung von Aufzugsanlagen.
- Die VDMA-Initiative zielt darauf ab, die Sicherheit bestehender Aufzugsanlagen zu verbessern.
- Die Betriebsbetriebsanweisung ist ein zentraler Bestandteil der Sicherheitsbewertung von Aufzugsanlagen.
- Die VDMA-Initiative zielt darauf ab, die Sicherheit bestehender Aufzugsanlagen zu verbessern.

### Das Ergebnis der Bearbeitung

- Je nach Risiko und Gütegrad werden verschiedene Maßnahmen ergriffen, um die Sicherheit zu verbessern.

- Sicherheit
- Zuverlässigkeit
- Langlebigkeit



### DIN EN 81-80

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### SNEL

*(Text partially illegible)*

### BetrSichV

*(Text partially illegible)*

### 7 Schritte auf dem Weg zum sicheren Aufzug

1. Die Durchführung einer Gefährdungsbeurteilung ist ein zentraler Bestandteil der Sicherheitsbewertung von Aufzugsanlagen.
2. Die VDMA-Initiative zielt darauf ab, die Sicherheit bestehender Aufzugsanlagen zu verbessern.
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7. Die VDMA-Initiative zielt darauf ab, die Sicherheit bestehender Aufzugsanlagen zu verbessern.

### Auszug aus der „Liste der signifikanten Gefährdungen“ der DIN EN 81-80

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Wir wollen, dass Aufzüge sicher sind.

# Modernisation market in Germany

## 2nd conclusion

- German legislation does not directly oblige the operator to carry out retrofitting or modernisation (liberal legislation, “Deregulation”)
- However, it holds him accountable with regard to safety (operator’s responsibility)
- And it ensures that modernisation is carried out in accordance with the state-of-the-art (= EN 81)
- This results in better quality and safe lifts

## Advantages and disadvantages of the “German model”

### Disadvantages:

- No direct “retrofitting or modernisation obligation”
- Danger that the operator will continue to operate unsafe lifts

### Advantages:

- Largely accepted by operators - no enemy concept manufacturers ↔ operators, but partners
- Minor official monitoring function necessary (reduced government expenditure)
- Increase in individual responsibility of all involved


## Outlook

- Measures for “lifting equipment” will also be investigated within the framework of the European “EUP” directive (energy-using products)
- The EUP directive is considered the key component in the EU climate protection program
- With 325,000 lift installations in Germany which are more than 20 years old, a substantial contribution could be made to environmental protection and energy efficiency if these installations were modernised
- Therefore, the executive committee of the VDMA Trade Association for Lifts and Escalators made the following decision in February:

# Outlook

The VDMA recognises the need to make a contribution to reducing environmental pollution and to increasing energy efficiency in the lift sector as well. For this purpose, it supports the goals of the EUP directive. However, an implementing measure within the framework of the directive only appears sensible if it is specifically tailored to the lift sector and is not dealt with in the framework of the broad application area of “lifting equipment”. An implementing measure for lifts must take account of the fact that a substantial contribution to increasing energy efficiency lies in the modernisation of existing lift installations.

# Characteristics and potential of the lift modernisation market

A low-angle photograph of several modern skyscrapers reaching towards a clear blue sky. The buildings are made of glass and steel, with their lines converging towards the top of the frame. The sky is a pale, clear blue, and some green foliage is visible at the top edge of the image.

Thank you for your attention!