



# Institute of Fire Protection Officers

ASSEMBLAGE FIRE SAFETY SEMINAR 12 May 2011

## Inclusive Egress



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# Introduction

- Background FM - H&S - Access -Fire
- Research Undertaken

## Agenda

Exploration of diverse needs in an evacuation  
Research findings

# Challenges

There are no specific requirements for upgrading existing buildings

Most building users charged with facilitating escape rarely have in depth understanding of the needs of disabled people.



# Definition of Disability (Equality Act)

## Disability

“...a person has a disability if they have a physical or mental impairment which has a substantial and long term adverse effect on their ability to carry out normal day to day activities ”

# DDA List of “Normal” day-to-day activities

- mobility
- doing something with your hands;
- physical coordination;
- continence
- ability to lift, carry or move everyday objects;
- speech, hearing or eyesight;
- memory or ability to concentrate, learn or understand; or perception of the risk of physical danger.

# Identifying diverse user needs

- Obvious/visible impairments
- Disclosed Impairments
- Proactive requests for notification
- Anticipatory measures
- Disability Awareness & Equality Training
- Avoid assumptions- ask!

# Identifying diverse user needs

*Can everyone:*

Raise the alarm?

Hear/See/Feel the alarm?

Understand which way to go?

Use the same routes?

Open the doors?

Disabled people are often well aware of personal risk management and may be more likely than others to act rationally....

*if* provided with appropriate information and consulted.

*.....this isn't happening enough!*

# Guidance Documents

FSO Guides on risk assessments, based on property use:



offices and shops, residential care, open air events and venues, factories and warehouses, theatres and cinemas, educational premises, Transport, small and medium places of assembly, large places of assembly, healthcare, sleeping accommodation.

# Means of Escape for Disabled People

## Supplementary guide



Visitors and Customers  
The Matrix  
PEEP templates  
New starter questionnaires  
Reception procedures

# Emergency Evacuation Plans

General (Visitor) GEEP

Personal Emergency Evacuation Plans (usually staff)

- *Communication - who should know?*
- *Is this a shared responsibility? (Typically YES)*

The individual detailed escape plan should be

- tailored to individual needs.
- Documented and reviewed regularly.

Success depends on involvement of the individual.

# Developing a GEEP programme

*“In order to provide suitable means of escape for visitors, a set of standard escape options should be adopted by the organisation.”*

- Create scenarios for unknown visitor needs
- Develop as many options as possible
- Discuss and fine tune
- If possible, rehearse
- Finalise, circulate, train
- Review regularly, refresh training regularly

# Developing a PEEP programme

- Raise awareness - offer all staff the opportunity for a PEEP
- Encourage realistic expectations
- You may need to negotiate reasonable adjustments
- You will need co-operation, Agreement, Commitment & Practice

The PEEP is a personal plan and so must be drawn up with the active participation of the person concerned.

**When** is the best time to evacuate?

**Where** do they go when the alert is raised?

**How** will they evacuate e.g.. by lifts,  
horizontally?

**Who** will buddy/assist/facilitate?

**What** assistive aids are needed?

## Preparing a PEEP

|                                      |                                     |                                    |
|--------------------------------------|-------------------------------------|------------------------------------|
| Type of support needed               | Lone or site working?               | Identify route of escape or refuge |
| Assistive aids                       | Holiday/Sickness cover              | Communication on the day           |
| Normal working location              | Agree Methodology                   | Management Procedures              |
| Personal support - identify a buddy? | Fire drill or practice              | Write policy and procedure         |
| Training required?                   | Back up Cover and refresher courses | Notify building management         |

# Maximising potential for *timely, independent escape* where possible

- Audio visual (& sometimes tactile) warnings
- Clearly signed and identifiable routes
- Highlighted nosings
- Good handrails
- Doors everyone can use - width, weight, locks
- Lighting & wayfinding systems



*Good Management arrangements may overcome shortfalls in the above.*

# Barriers to Escape

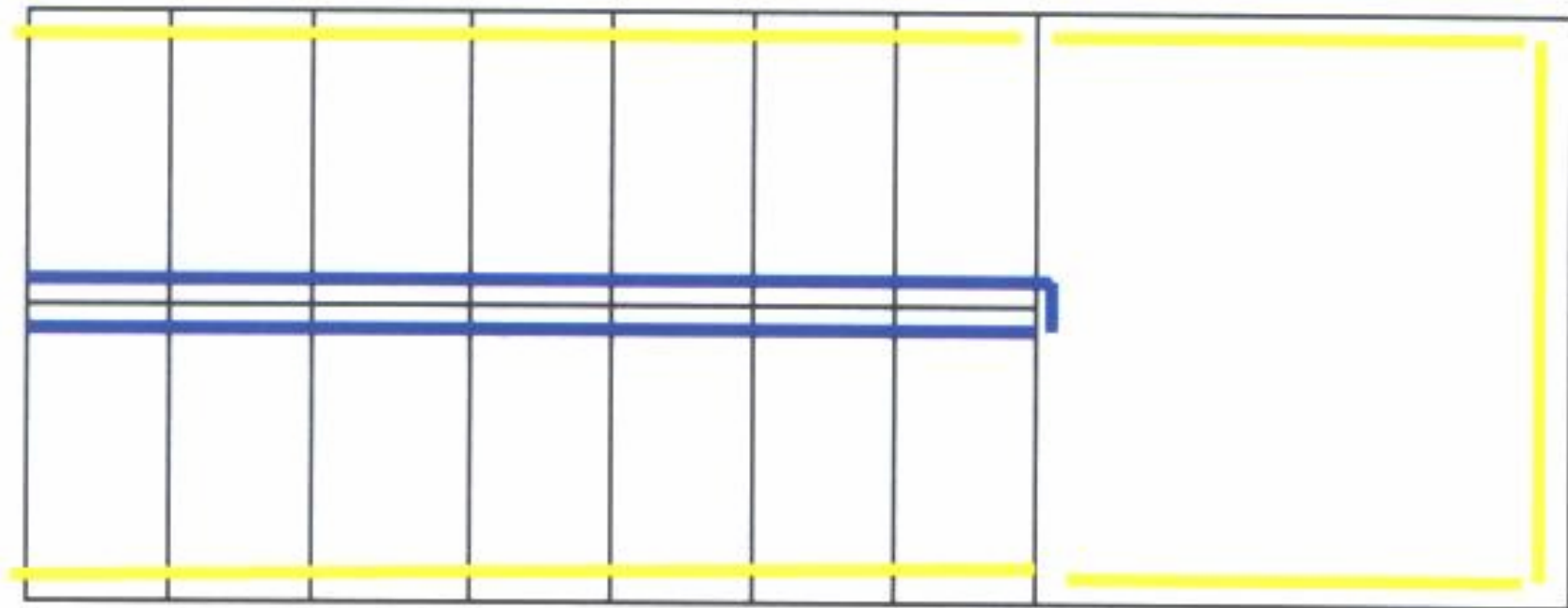
1. Heavy Doors
2. Obstructions
3. Poor Signage & Wayfinding
4. Inadequate Lighting & contrast
5. Clear Procedures

# Consider hand strength? Fine dexterity? Understanding?



# Meeting individual needs

## Two speed escape stair

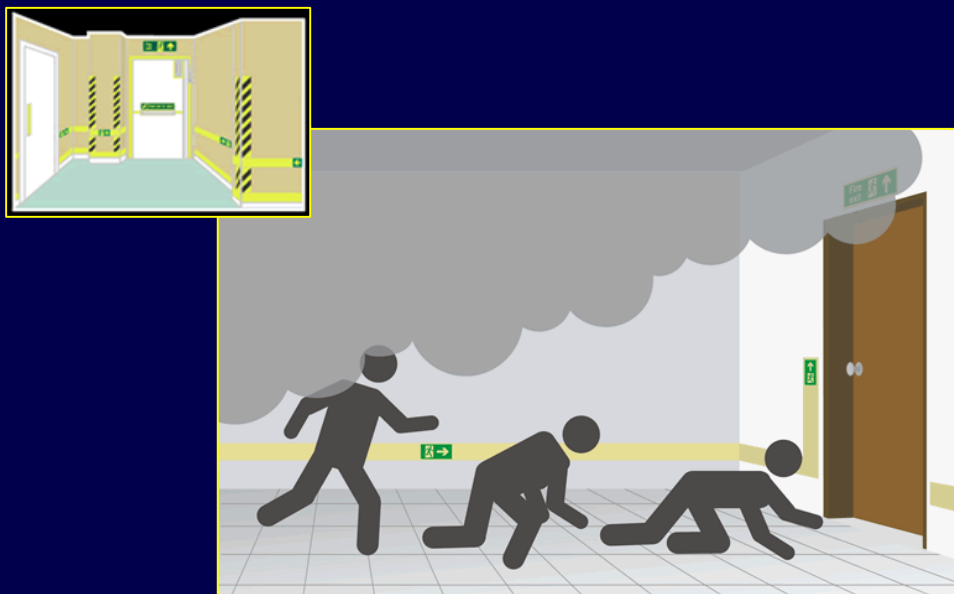


# Staircases



# Emergency Routes

Consider supplementing with alternative ways of marking escape routes



## Assisted Evacuation for ambulant disabled people

- Avoid the main cluster of evacuees when exiting the building
- Assisted/guided to a place of safety outside the building where possible without lifting
- If there is no suitable lift, people who cannot manage stairs independently should be assisted or directed to a place of *temporary* refuge to await assistance by staff.

# Evacuation by Lift

Any lift used to evacuate from fire should be either a firefighting lift or an evacuation lift.

- An evacuation lift should be identifiable
- Where there is a firefighting lift, this can be used for evacuation but a strategy and procedure is essential

My research revealed that many people are unaware of this or feel that it is too complicated to put systems in place.

# Purpose of the Refuge

- a protected zone or compartment to await **further evacuation**
- a relatively safe waiting area for **short** periods
- an area used with **progressive horizontal evacuation**

*They are not areas where disabled people should be left alone indefinitely until rescued by the fire brigade, or until the fire is extinguished*

# Refuge

1. Minimum half hour fire resistance
2. 1400 x 900mm minimum, 1 per level each stair min
3. Display blue mandatory sign “Refuge keep clear”
4. 2-way Communication point
5. Instructions



# Structure of Research Study

- Review of current legislation & guidance
- Some international comparisons
- Questionnaire survey 2006
- Further training and knowledge building
- Action research on 2 client projects

# Survey Results

- 2006 1 month survey; 64 responses; 50-50 split between private and public sector
- 34% did not address disabled egress in fire plans
- but 56% had evacuation aids
- Almost a third of these shared them between floors (2-4 typically, 9 and 15 exceptionally)
- 36% had communication in the refuge;
- Carry down was greatest concern
- 12.5% admitted refusing entry

# Challenges of Carry down identified

- Appropriate buddies, enough buddies, in the right place
- Misuse & vandalism of equipment
- Majority placed responsibility on the disabled individual
- Assessments most likely at induction or disclosure
- Lack of disclosure and data protection
- Evacuation chairs 'created more risks than they cured'
- At least one had an evacuation lift but no procedures
- <50% recognised the disabled individual as a suitable source of advice
- Training - type and frequency

# Mobility Impairment

## - Options if no suitable lift

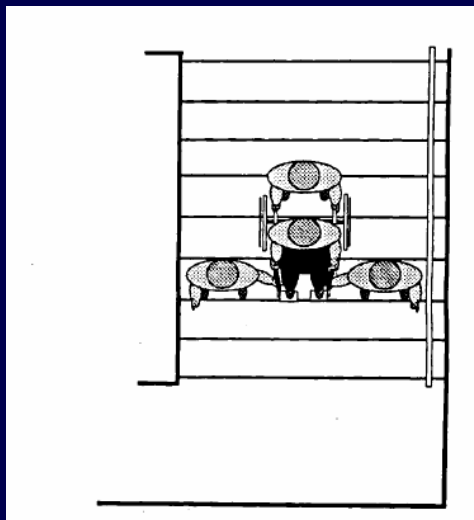
1. Horizontal evacuation
2. Assisted escape
3. Carry down procedures (FSO guidance):
  - Manual Evacuation Aid
  - Carry down/wheelie down in own wheelchair
  - In office chair
  - Mechanical equipment



# Carry Down Evacuation

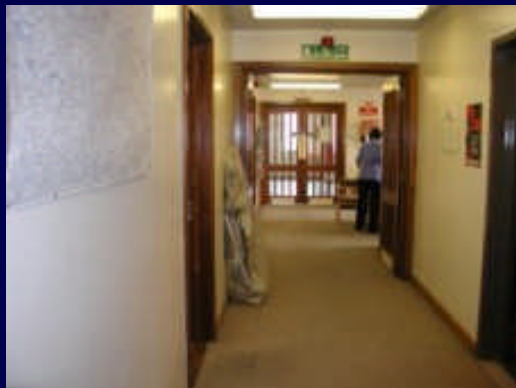
- Ensure corridors/stairs are not obstructed by wheelchair
- Remain in wheelchair until transfer to evacuation aid is necessary
- Carry down arrangements should happen after the main evacuation
- Depending on the method of evacuation, a lightweight wheelchair and blanket/wrap may be beneficial
- Someone may need to carry a wheelchair down

## Evacuation Aids for assisted egress



Carrying and lifting techniques are more important than strength but good grip is essential

# Evacuation Aids



- Sensibly located
  - Suitable for the disabled person
  - Suitable for the buddy/assistants
- Weight restrictions apply*  
*Frequency of Refresher training*

# Evacuation Aids

Evac Chairs

Motorised stair climbers



# Mobile Stairclimbers

- **Designed to climb up & down stairs.**
- Available either as a seated device into which the user is transferred or as an attachment that fits onto a wheelchair.
- **Some have caterpillar tracks that grip the stairs**
- Others have a wheel cluster which rotates
- **Powered by rechargeable battery.**



# People Handling

- Task
- Individual/s (to undertake the lift) *Footwear!*
- Load (Person to be lifted) *Co-operation?*
- Environment (Lighting, slip resistance, horizontal, vertical) *Nosings?*

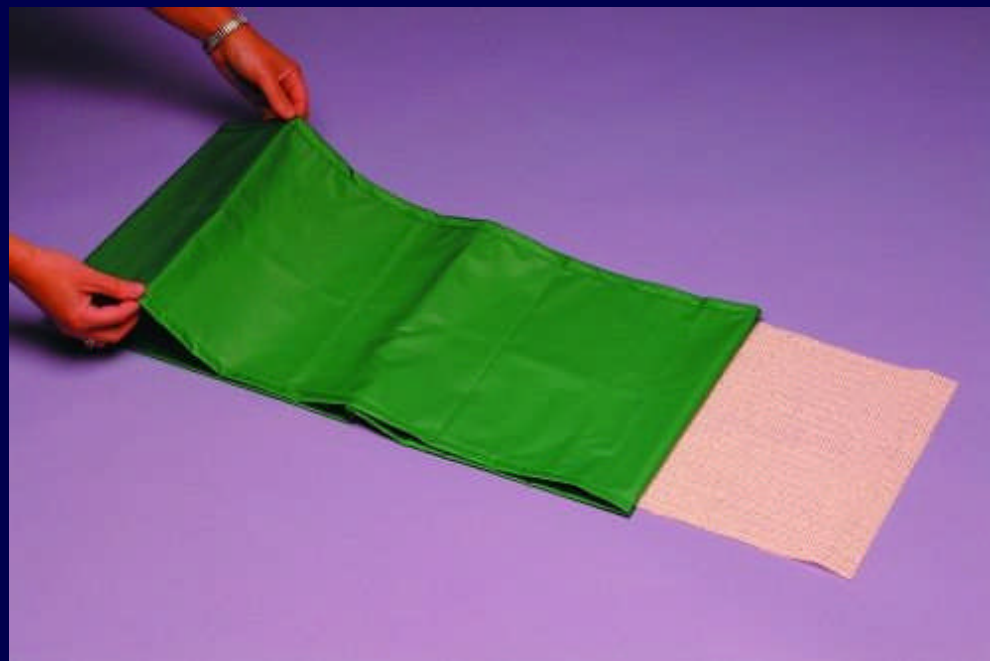
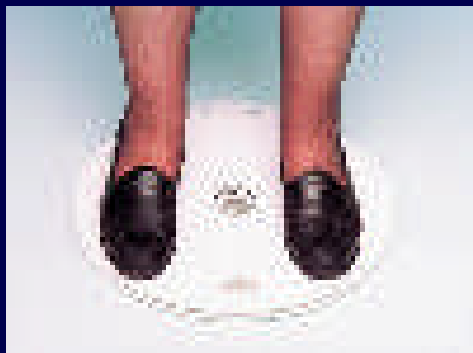
# People Handling

- Competency-based training in people handling and in undertaking risk assessments. *(Not just standard Manual Handling).*
- Rehearsals should include physical enactment in a controlled way. *People remember physical actions over information provided cold.*
- Weighted handling mannequins are available but can introduce other risks
- Never practice the actual carry down itself with a disabled person

# People Handling

- There is no such thing as a “no risk” situation
- Carry down should therefore be delayed until the risk from fire is confirmed
- Horizontal evacuation can delay the need to carry down further
- The risk assessment will therefore be about risk deferral and reduction rather than elimination

# Is independent transfer possible? *Involve the disabled person - ask!*



# Slide Sheets

Slide/Glide transfer -  
can be used if unconscious

Purchase Large sheets for optimum  
flexibility

Care staff accustomed to use



# Transfer Board

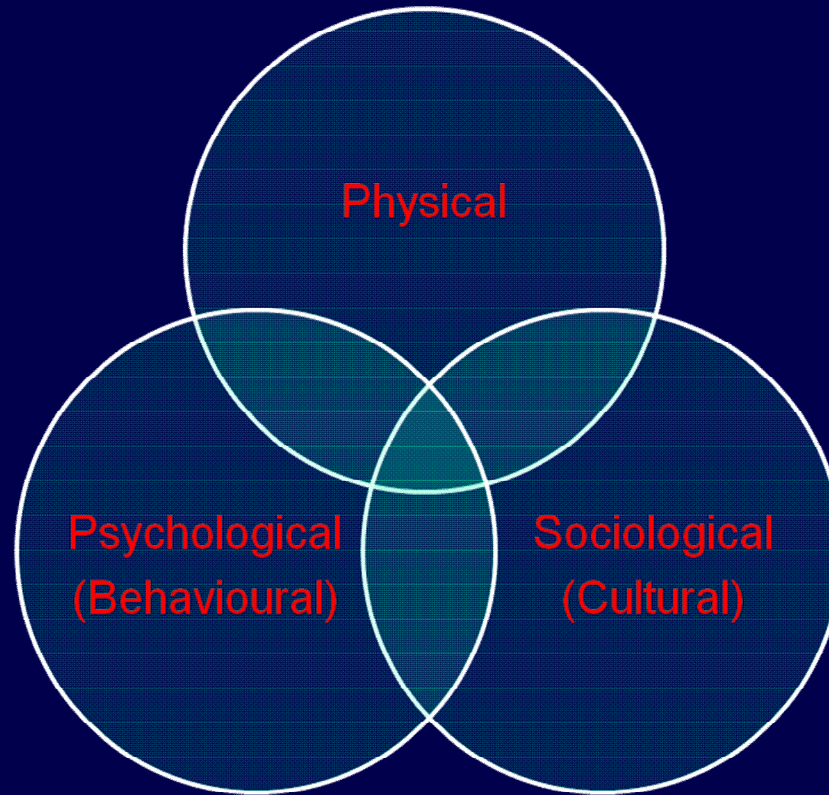
- Strong & Light
- Usually hardwearing plastic



# People Handling

- Liability can be an concern amongst buddies
- Many FRS willingly rescue from refuges but it cannot be guaranteed
- The legal duty to make arrangements for full evacuation lie with the organisation, not FRS
- Sensible approaches must be taken
- Lack of resources is not an excuse
- Was the situation foreseeable?
- Does a plan exist?
- Was the plan tested/rehearsed as far as practicable?

# Carry down is more than just a physical task



See the people!

# UNKNOWN NEEDS

Consider the characteristics of the building

Assess the evacuation equipment that might be needed

Train your staff to deal with a range of emergency needs

Determine what needs to happen when the alarm goes off

# Summary

Know your building

Know & involve your occupants (if possible)

Know your equipment

Train your buddies

Conduct Risk Assessments

Test your procedures

Review regularly, train regularly

Identify what needs to be done when it is not possible to evacuate someone

# Evacuation isn't always about fire.....

- False Alarm
- Drill
- Building collapse
- Terrorism
- Explosion
- Flood

The procedures and routes may need to be changed.

# Typical Comments in Research Study

*'I have found the whole subject of emergency egress for people needing assistance a very difficult one to tackle and solve. Notwithstanding the fact that our main tenant who employs several people with disabilities cannot even offer a volunteer fire warden'.*

*'The issue in some older buildings is huge and there is a bit of an ostrich mentality among managers. Fire evac lifts are very expensive and not a viable option. Not enough national publicity has been given either for managers or to raise awareness of people who may require assisted egress.'*

# New research initiative

- Fire Strategy & Inclusive Design
- Group formed 6 months ago
- Focus on higher risk - places where people sleep i.e. Hotels, hostels, residential
- Identify user needs, views and fears
- Small scale pilot proposed later this year
- Funding partners welcomed

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