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ICTA Workshop ~ Saudi Arabia Ministry of Social Affairs



People with Activity Limitations / Personnes à Performances Réduites

Protection from Fire in Buildings

Dedicated WebPage



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Protection from Fire in Buildings Design Concepts & Principles

This WebPage began life as an Appendix to a [1999 International Paper](#) presented in Belgium by
C.J. Walsh – Chief Technical Officer, FireOx International.

Original Figures, Drawings and Graphics are now being updated to show current state-of-the-art,
and integration into 'mainstream' fire engineering of adequate fire protection for people with activity limitations.

Our future work will look more closely at adequate fire protection for firefighters/rescue teams.

<http://www.fireox-international.com/fire/appendixd.htm>



People React Differently to Emergency Incidents :

- they must be '**Skilled**' for evacuation to a '**Place of Safety**'
- warnings must be timely, accurate, informative,
and be understood !
- **PANIC** exists !!!

Panic

A sudden overwhelming feeling of anxiety, which may be of momentary or prolonged duration.

Anxiety is the normal response of the human body to recognised danger. Numerous reflexes are involved. The supply of blood to the muscles is greatly increased, partly because the heart beats more rapidly and strongly, and partly because the blood vessels of the muscles dilate while those of many other organs constrict, diverting the flow of blood to where it is most needed. The muscles themselves are tensed. Breathing is deeper and more rapid. The mind becomes more alert, and the pupils dilate, admitting more light to the eyes.

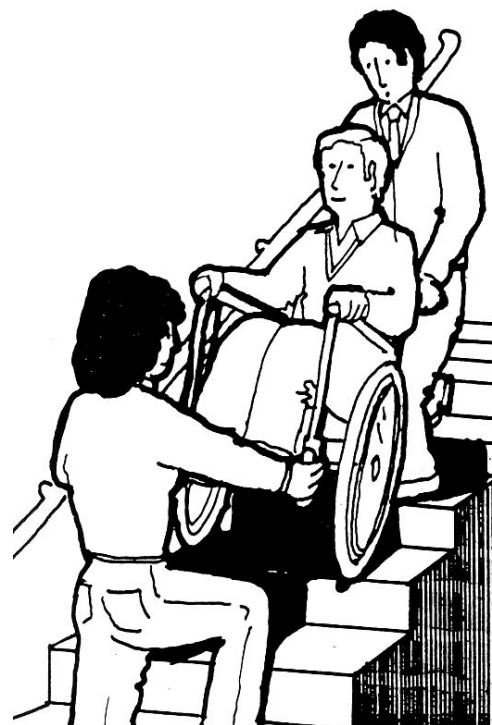
Fire Engineering Design Objective

During and after the process of independent evacuation to a '**Place of Safety**' which is distant from a fire building, or partial evacuation to a '**Place of Relative Safety**' within the building, or **Protection in Place**, for example, in the case of health facilities - the individual Health, Safety and Welfare of those people involved, including firefighters, should be assured.

**Building Design in general, and Fire Engineering in particular, must begin with this Objective ;
it can not be grafted on afterwards !**

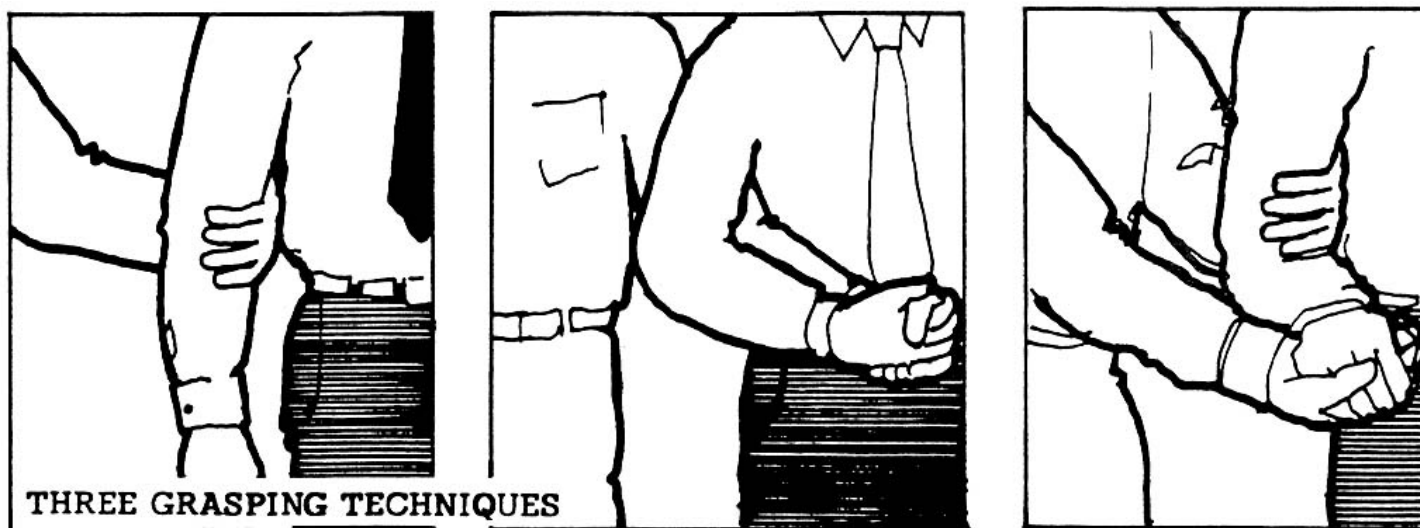
Assisted Evacuation Techniques I

Physical Function (Mobility) Impairment



Assisted Evacuation Techniques II

Visual Impairment

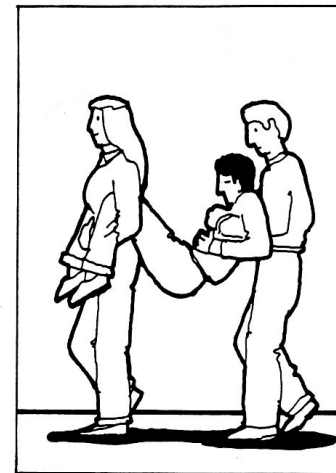
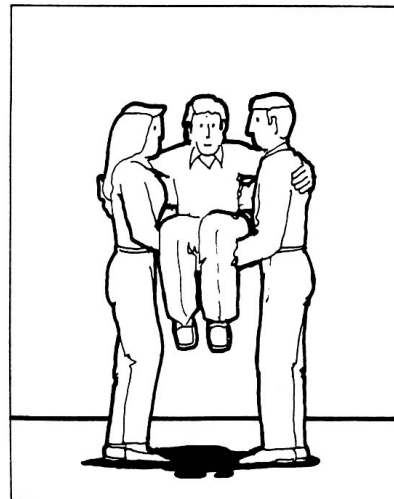
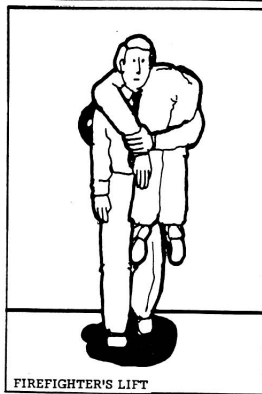
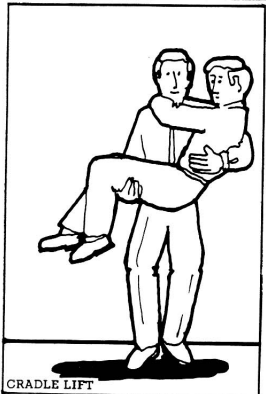
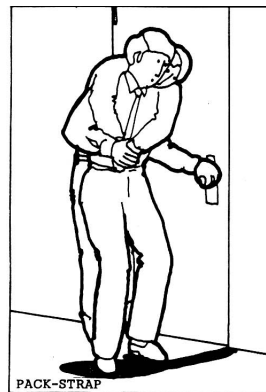


NRCC Report: 'Evacuation Techniques for Disabled People'. Byron Johnson. March 1983.



Assisted Evacuation Techniques III

Impacts on Person Assisting / Being Assisted ? Consultation !!

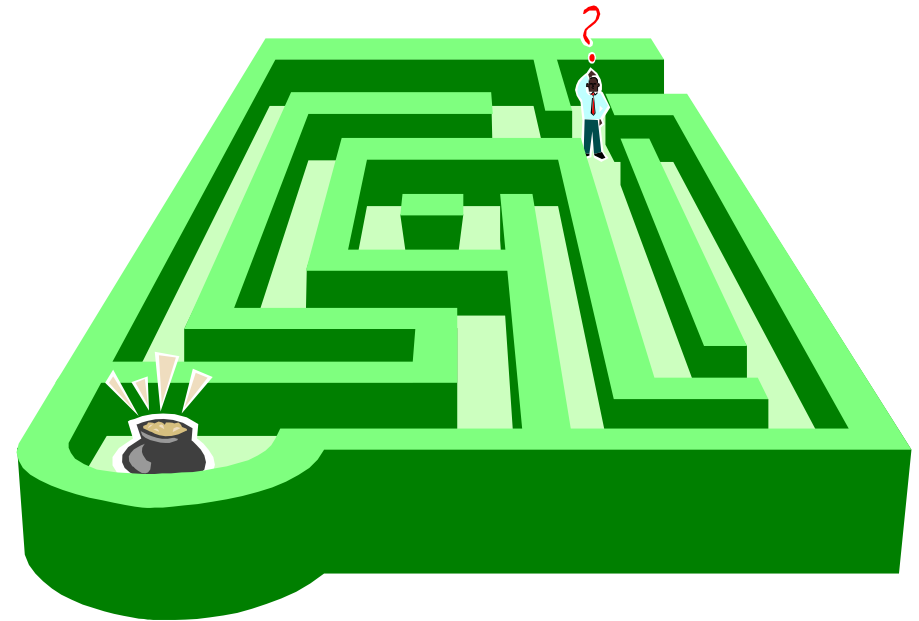


Evacuation Exercise in Dublin Shopping Centre

January 2002

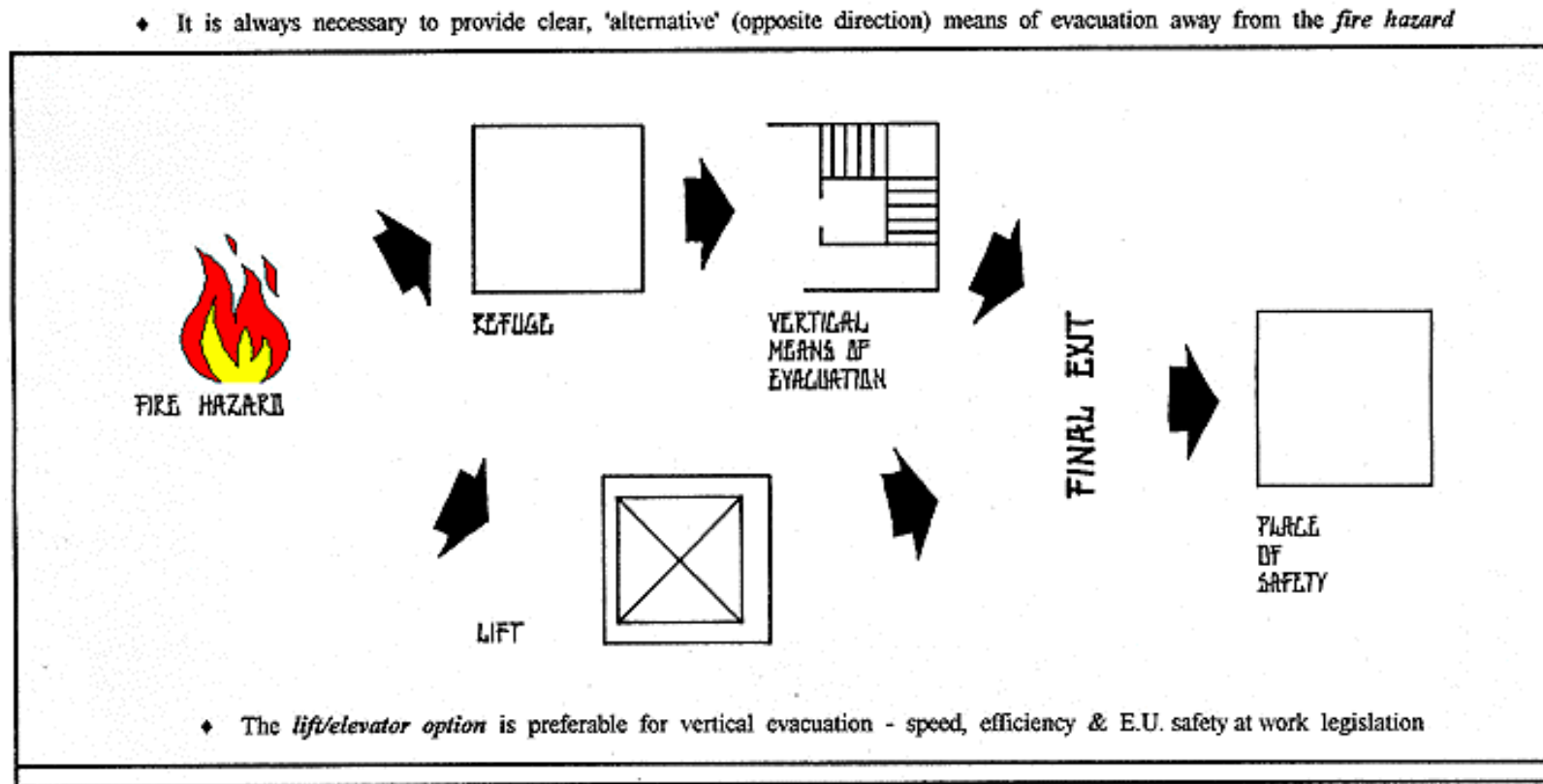


- ◆ Building 'Understandability' ?
- ◆ Personal Orientation ?
- ◆ Relationship with Exterior ?
- ◆ Clear Signage ?
- ◆ Use of Elevators/Lifts ?
- ◆ Accessible, Safe Staircases ?
- ◆ Use of Escalators ?



"where is the final exit ?"

Building Design for Evacuation !?



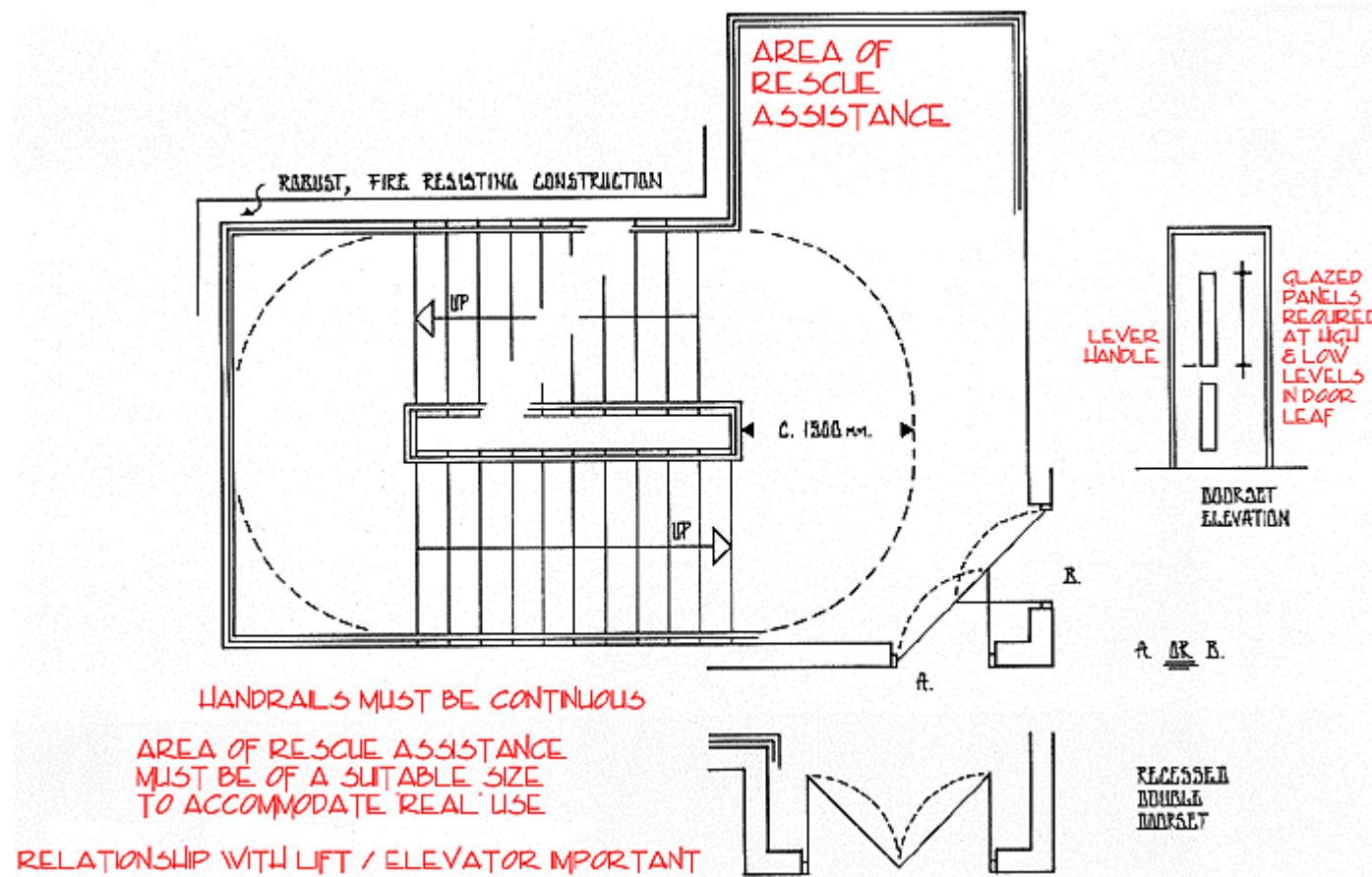
Principles of Evacuation to a 'Place of Safety'



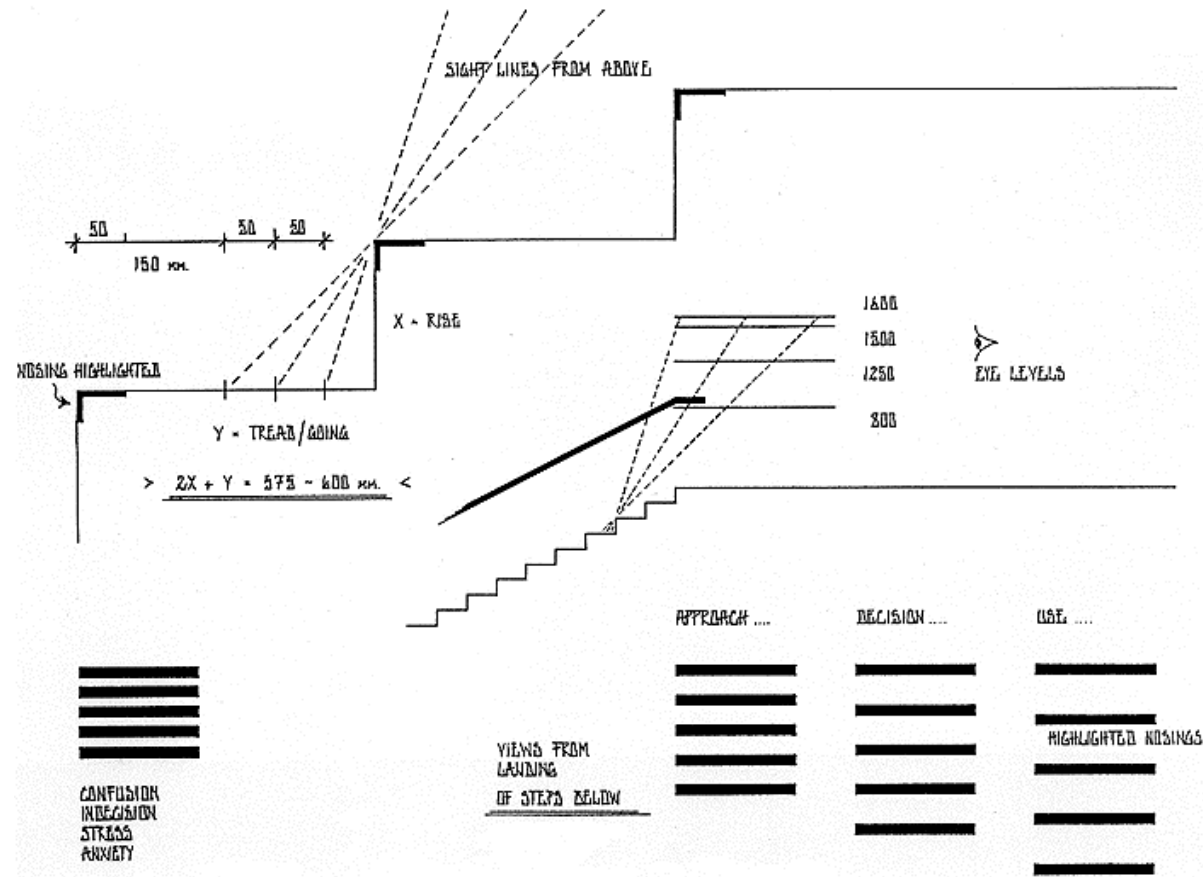
Means of Evacuation

(for people with activity limitations)

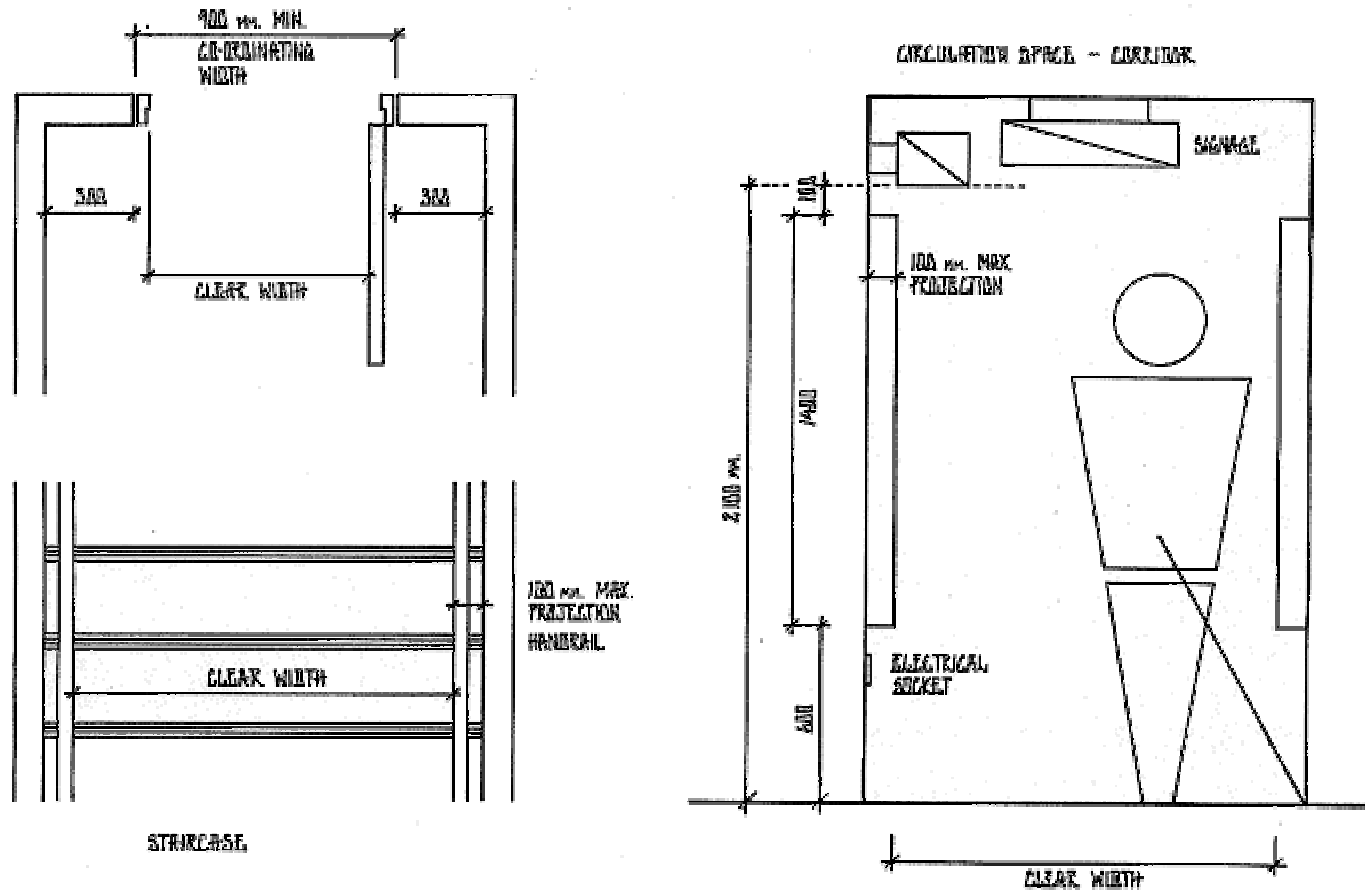
[Alternative & Protected Means of Attack for Firefighters]



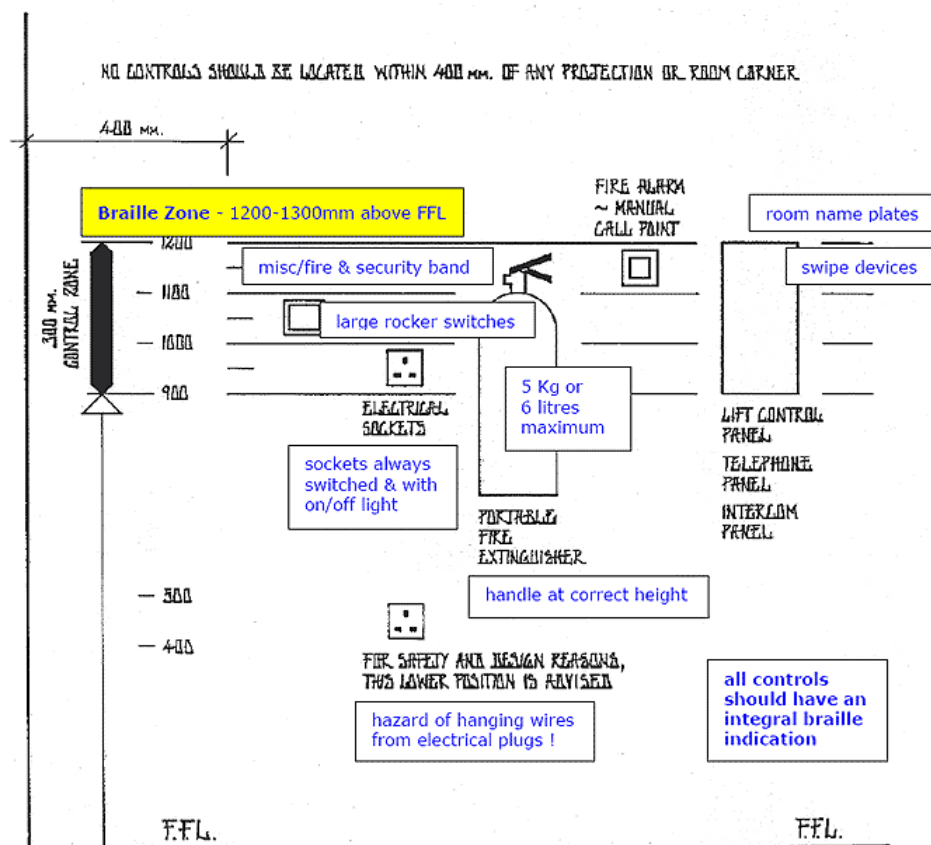
Evacuation Staircase in Hardcore Construction



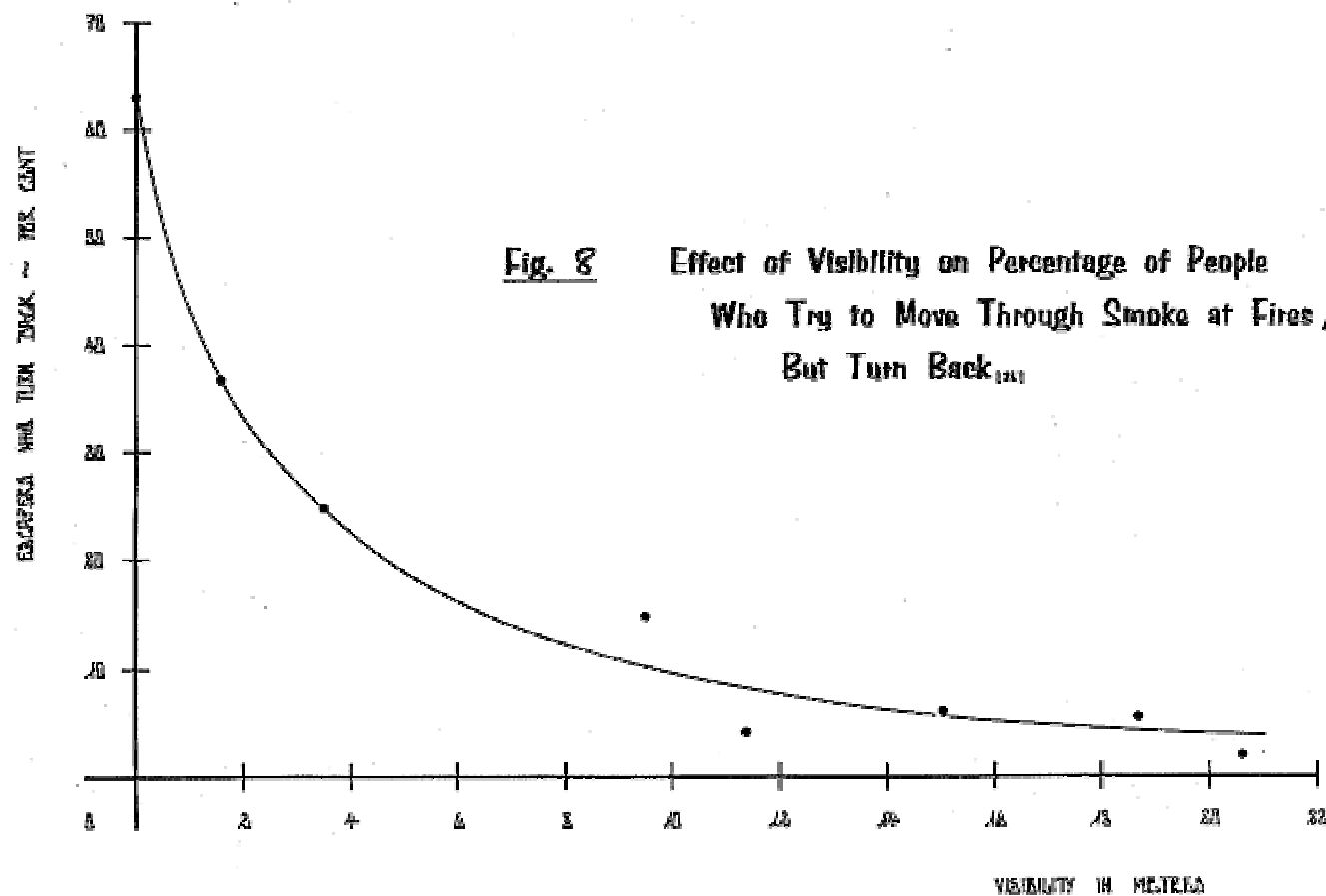
Detailed Staircase Design for Evacuation



Projections & 'Clear Widths' in Evacuation Space



Location & Height of Controls / Equipment



Smoke Visibility - People Who Turn Back !

Fire Safety Strategy

A coherent and purposeful arrangement of fire protection and fire prevention measures which is developed in order to attain specified fire safety objectives.

Fire Defence Plan

A pre-determined and co-ordinated use of available human and material means in order to maintain an adequate level of fire safety and protection within a building and, in the event of an outbreak of fire, to ensure that it is brought speedily under control and extinguished.

Protection from Fire in Buildings

Personal Check List for People with Activity Limitations

1. Upgrade 'My' understanding of **Accessibility**
Ease of independent approach, entry, evacuation and/or use of a building and its services and facilities, by all of the building's potential users ~ with an assurance of individual Health, Safety and Welfare during the course of those activities ;
2. Be assertive (not aggressive) with regard to 'My' own self-protection ;
3. Concerning 'My' safety - demand that management actively engages in **Meaningful Consultation** - and receives your **Informed Consent** ;
4. Be familiar with the **Fire Defence Plan** for the building, and know 'My' part well ;
5. Be *skilled* in evacuation to a **Place of Safety** ;
6. Be involved, and participate directly in safety procedures.

Protection from Fire in Buildings

Must-Do List for Concerned Organizations & Groups

1. Upgrade 'Our' understanding of **Accessibility**, & its vocabulary
Ease of independent approach, entry and/or use of a building and its services and facilities, by all of the building's potential users ~ with an assurance of individual Health, Safety and Welfare, and group Wellbeing, during the course of those activities ;
2. Be assertive (and aggressive) with regard to the availability of proper **Data and Statistics** - we must clearly identify 'Our' problem ;
3. Produce a working statement of an **Individual's Rights** - on 1 Page (!) ;
4. Issue clear guidelines on **Reliable Advocacy** ;
5. Be involved, and participate directly in the development of design, structural and fire safety **Building Codes and Standards** ;
6. Demand resources to **Monitor Implementation & Target Research**.