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# **Knowledge FOR Resilient soCiEty**

## **SIX Stages of Rescue “REPEAT”**

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# SIX Stages of Rescue

**“REPEAT”**

**R**econnaissance and survey

**E**limination of utilities

**P**rimarily surface search and rescue

**E**xploration of voids and spaces

**A**ccess by selected debris removal

**T**erminate by general debris removal



# Reconnaissance and survey

- **Information**
  - number of persons missing
  - location
  - building plans & local knowledge.
- **Observation**
  - assess building stability
  - identify access points
  - Secondary collapse
  - Resource management..



# Reconnaissance and survey

- **Structural Assessment**
  - What is extent of collapse?
  - How many floors?
  - How large is structure?
  - What occupancy type?
  - What construction type?
  - What collapse type?



# Reconnaissance and Survey

- **Make a plan**

- Assess site
  - Sketch plan + notes
  - Safety aspects
  - Talk to witnesses
  - Consider structure -materials, substrate, debris pattern
  - Surface or structure search
  - Check accessible voids
  - Stimulate response from a casualty
  - Hasty search
  - Listen to major structural parts
  - Go for most probable locations
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# Elimination of utilities

- **Control measures**

- Remove risk -isolation of services –water, gas, and electricity
- Separate personnel from hazard areas -use of cordons and
- barriers
- Secondary collapse
- Fire fighting
- Water run-off
- Haz-mat contamination



# Primary surface search and rescue

- Clear the site of visible casualties, develop the larger picture and prepare for a planned and Prolonged incident
- Brief personnel on risk assessment
- Casualty Location Officer (CLO) -gathers information about pre-collapse location of casualties to help pinpoint position
- Start assessing resources –shoring, equipment, personnel

# Primary surface search and rescue

- Search and record location of other casualties
- Hailing -Position members all around debris, all quiet, call out and listen for casualty response
- Visual -Position members all around debris and scan area for things that will help identify casualty locations
- Surface search: Visible body parts above debris -usually completed by first responders prior to arrival of rescue teams
- Speed with caution, Develop rescue plan

# Exploration of voids and spaces

- Explore survival points identified in Stages 1 and 3
- Rescue lightly entrapped casualties –maintain control of medical agencies
- Silence every hour
- Use dogs and listening devices and other technical equipment

# Exploration of voids and spaces

- Identification of Voids – visual search & marking -document areas for further search
- Search for casualties in known voids –use of visual, audio and thermal search equipment
- Breaching into voids –care taken to prevent collapse on to casualties
- At the end of Stage 4 most of the casualties that will survive have already been found
- If a multi-site incident you should be moving on to Start Stage 1 at another

# Access by selected debris removal

## ccess by selected debris removal

- Selected debris removal –concentrate on areas where person are known to be (information from Stage 1/3)
- Explore voids more fully, Removal of debris to free pinned or trapped casualties
- Tunneling and selective shoring techniques in use at this stage
- Removal of debris to access other voids
- Sub-surface search –risk assess
  1. test for gas and unstable debris,
  2. use search cameras and listening equipment,
  3. maintain egress in case of secondary collapse,
  4. use of rope access equipment

# Terminate by general debris removal

Systematically remove debris to gain further access to search areas

- Cranes and heavy machinery, plasma and oxy-acetylene cutters
  - Remove debris only after all known victims have been removed with the exception of when information gained indicates possibility of other victims not accounted for or large amount of debris impairing or obstructing operations
  - Using heavy equipment during this stage to be given serious consideration when there is possibility of live victims remaining
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Thank you for your attention!

