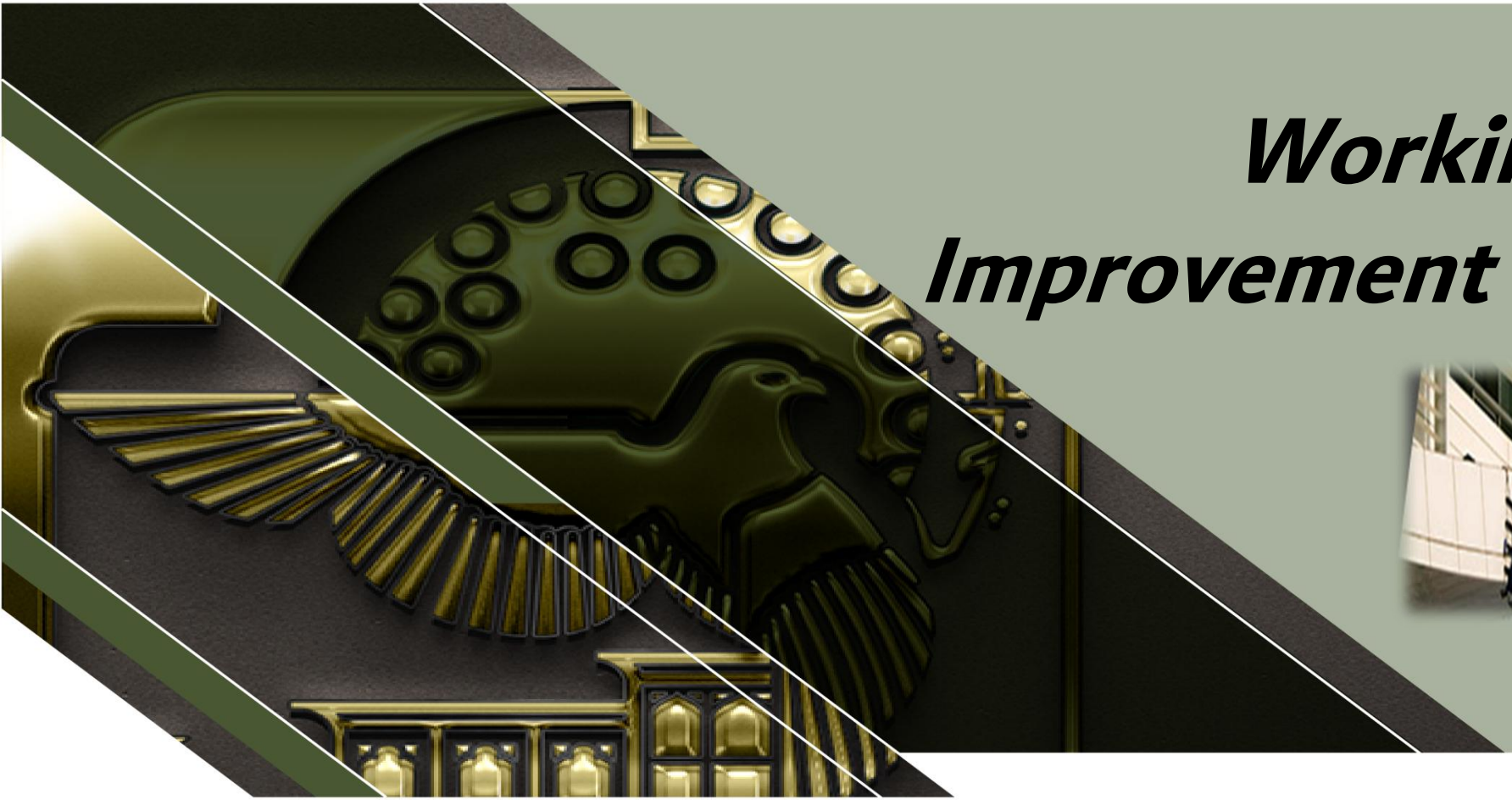
حكومة دبي
GOVERNMENT OF DUBAI

بلدية دبي
DUBAI MUNICIPALITY



Working at Height & Improvement Opportunities

Health and Safety Department
Dubai Municipality Control Sector

BY: ENG RAED AL MARZOOQI,
OHS SECTION MANAGER -HSD

بناء مدينة سعيدة ومستدامة
Developing a happy and sustainable city

S4S
السلامة من أجل الاستدامة
Safety for Sustainability
An Initiative by Dubai Municipality مبادرة من بلدية دبي

AGENDA

A INTRODUCTION - STATISTICS & LEGISLATIONS

B UNSAFE CONDITIONS AND FALL FROM HEIGHT ACCIDENTS

C PREVENTING FALLS AND RELATED CHALLENGES

D FUTURE PLANS AND CONCLUSION

A

INTRODUCTION
STATISTICS
LEGISLATIONS

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ILO'S STATISTICS

"Every day, people die as a result of occupational accidents or work-related diseases (*ILO*)

- More than **2.78 million deaths** per year.
- Additionally, there are some **374 million non-fatal** work-related **injuries and illnesses each year**, many of these resulting in extended absences from work.
- The human cost of this daily adversity is vast and the **economic burden** of **poor occupational safety and health practices** is estimated at **3.94 % of global GDP each year**".

WORLD STATISTICS

Falls from height continue to pose serious risks to the health and safety of workers worldwide !!

UK

Falls from a height accounted for an average of 40 fatal injuries per year (28% of the total) UK (five years annual average RIDDOR , 2012 – 2017)

Australia

Fall from height rate for last eight years remain unchanged.
This number of deaths represented 12% of all worker deaths in that period

Different Countries Statistics

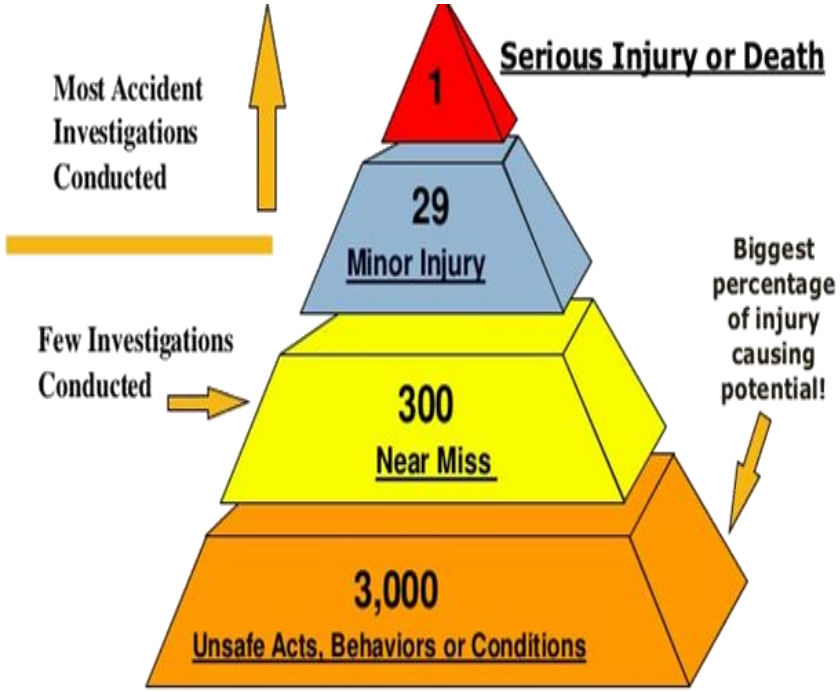
US

Falls — 384 out of 991 total deaths in construction in Year 2016 (38.7%)

Singapore

More than One third of the total deaths reported, were due to fall from height in 2015 that is 38 %

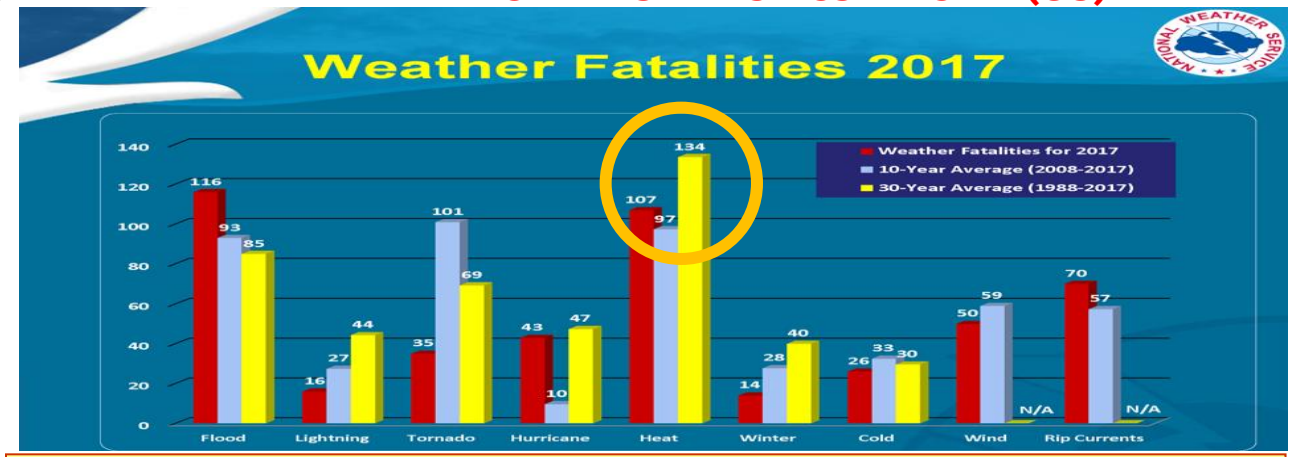
FALL FROM HEIGHTS & WEATHER FATALITIES (HEAT)



Heinrich's Law: that in a workplace, for every accident that causes a major injury, there are 29 accidents that cause minor injuries and 300 accidents that cause no injuries.

Because many accidents share common root causes, addressing more common place accidents that cause no injuries can prevent accidents that cause injuries.

INTERNATIONAL STATISTICS * NOAA (US)



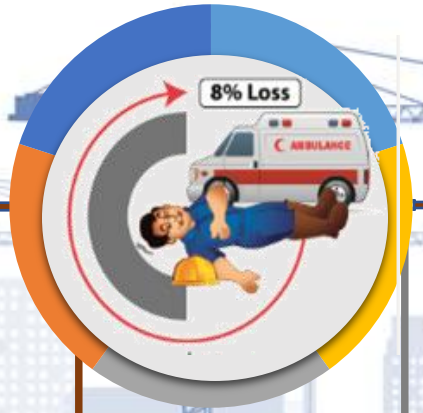
The Highest Fatalities in for 10 Year Average (2008- 2017)

Fall from Heights Statistics in 2016 (Dubai)

HEAT STRESS (HIDDEN ISSUES)

FALL FROM HEIGHT INCIDENTS

(Hidden issues behind increase in fall from height.....Heat Stress .....



Risk of fall from heights

Impaired Physical Performance

Visual Disorientation

Confusion leads to ignore Safety procedures

Discomfort causes people to lose their temper

Heat Causes poor judgment

HEAT STRESS VIDEO BY HEALTH & SAFETY DEPT. (2017)

WORLD CONGRESS ON SAFETY & HEALTH AT WORK 2017

INTERNATIONAL MEDIA FESTIVAL FOR PREVENTION, SINGAPORE

SAFE SUMMER VIDEOS

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XXI WORLD CONGRESS ON SAFETY & HEALTH AT WORK 2017

issa

LEGISLATION – FEDERAL

وزارة الموارد البشرية والتوطين
MINISTRY OF HUMAN RESOURCES & EMIRATISATION

Article (19) b- is about construction work and scaffold requirement.

Article (1) - is about duty of employer to protect their employees

Article (10)& (11) . Mentions about requirement of barriers

Ministerial Order 32 /1982 (federal)

Article (2) & (3) , is about training and signage need

Article (7)h , is about condition of work place including mobile ladder requirement.

Article (9) , mentions requirement for employer to put necessary precaution to protect worker from the danger of falling, falling objects etc.

LEGISLATION – LOCAL ORDERS

Local Order 61/1991, Chapter IV

Article 38

Responsibility for Employer

Article 42

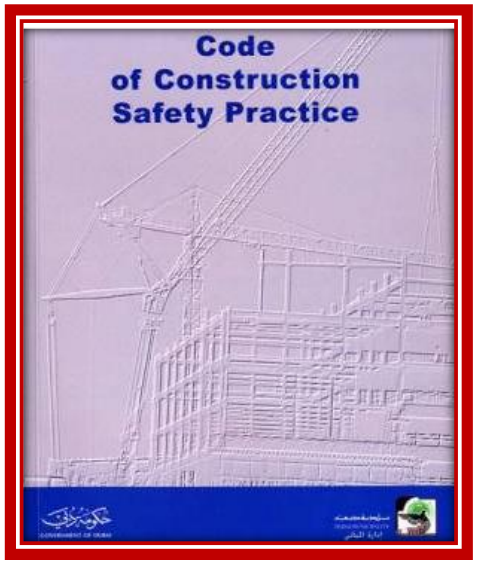
Workers responsibility to advise employer on dangers Employer's responsibility to ensure danger is controlled

Article 44

Duties of Health and Safety Inspectors

LEGISLATION – CODE OF PRACTICE(COP)

COP CONSTRUCTION SAFETY PRACTICE



Chapter 14

- **Item 4.2.8 safety belts , lifelines and lanyards**
- **Item 4.2.9** Safety nets

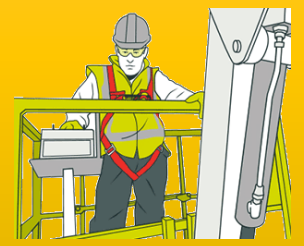
Chapter 8

Scaffolding Safety

Chapter 11

Item 11.7

Fall protection



LEGISLATION – TECHNICAL GUIDELINES

Technical guidelines :

- **DM-PH&SD-P7- TG07 – Rope Access Work**

Organization Unit:	Public Health & Safety Department	الوحدة التنظيمية:
Form sheet title:	Guidelines for Rope Acsess Work	اسم النموذج :
Doc Ref.	DM-PH&SD-P7-TG07	رقم النموذج :

Rope Access Work

Background: Most current building exterior cleaning and maintenance activities involve the rope access as method to reach the work area. Proper safety is made up of proper planning, training, operation, maintenance of work equipments procedures and commonsense. All companies/personnel shall obey the rules with regard to operation and maintenance of equipment for rope access work. Dubai Local Order 61/1991 requires that employers provide a safe work area. The following guidelines are compulsory to all employers.

Guidelines:

Administrative Circular No 6:

- **Heat Stress Prevention**

تعميم لجميع المؤسسات في إمارة دبي

Circular to All Establishments in the Emirate of Dubai

Subject: Heat Stress Prevention in Summer — **الموضوع: الوقاية من الاجهاد الحراري خلال الصيف**

To ensure Heat Stress prevention in Summer in line with the requirements mentioned in the Ministerial Decree No. 401 of 2015, concerning the determination of Midday Working hours, the Local orders (61 of 1991 & 11/2003 regarding Occupational Health and Safety Regulations, Code of Construction Safety Practice Clause 3.15 and related Technical guideline, We hereby remind and direct all establishments to ensure compliance towards the following(but not limited to);

- Provision of electrolyte drinks, approved by ASMA / DHA and Consumer Material Safety Section and should be done under their close supervision.
- Provision of sufficient cold drinking water in proportion to the number of workers working in the respective site/establishments.
- Availability of sufficient number of first Aid boxes and first aiders at each respective Site/ establishments.
- Provision of suitable and sufficient numbers of shelters /sunshade and Personnel Protective Equipment for protection of workers from direct sunlight.
- Workers/employees awareness on heat stress and display "Safe and Healthy Summer" posters, published by Dubai Municipality (see DM web page), at frequently visited worker's locations on sites/establishments.
- Adherence to Mid-day breaks and other periodic breaks (as needed) during the work, to prevent workers/employees from heat stress.
- Transportation of workers/employees in suitable vehicles to prevent aggravating heat stress.
- Adequate emergency preparedness to protect workers/employees during emergencies

All employers shall be given One weeks from date of this circular to comply with the above and failure to comply with this directive shall result in penalties and/or further needed legal actions.

For any further clarification, contact Occupational Health and Safety Section on the following :

Essa Almuallemi	ehalmuallemi@dm.gov.ae	04-606 6061
Sudir More	sbmore@dm.gov.ae	04-606 6039

Sincerely,

Eng. Redha Salman

Director, Health and Safety Department

لضمان الوقاية من الاجهاد الحراري خلال الصيف وبما يتماشى مع المتطلبات المذكورة في القرار الوزاري رقم 401 لسنة 2015، المتعلق بتحديد ساعات عمل الظهيرة، الأوامر المحلية (61 لسنة 1991 و 11 لسنة 2003) المتعلقة بمتطلبات الصحة والسلامة المهنية، ودليل ممارسات السلامة في المواقع الإنشائية (البند 3.15) والإرشادات الفنية ذات الصلة، نود تذكير وتوجيه جميع المؤسسات إلى ضرورة الالتزام بالتالي (على سبيل المثال لا الحصر):

- توفير مشروبات الالكتروليت المعتمدة/ المسجلة لدى هيئة المقاييس والمواصفات /هيئة الصحة وقسم سلامة المواد الاستهلاكية ويجب ان تكون تحت رقابة إشرافية.
- توفير مياه الشرب الباردة الكافية بأعداد متناسبة مع أعداد العمال في كل موقع من أماكن العمل بالمواقع أو الشركات.
- توفر عدد كاف من صناديق الاسعافات الأولية والمسعفين في كل موقع من أماكن العمل بالمواقع أو الشركات.
- توفر عدد كاف من الاستراحات أو المظلات وأدوات الحماية الشخصية لحماية العمال من التعرض لأشعة الشمس المباشرة.
- وعي الموظفين/العمال بمخاطر الإجهاد الحراري وإظهار ملصقات "صيف صحي وآمن" الصادرة من بلدية دبي (اطلاع على الموقع الالكتروني لبلدية دبي) في أماكن العمل المتكرر التواجد بها في الموقع/الشركة.
- الالتزام باستراحات الظهيرة والاستراحات الدورية الأخرى (حسب الحاجة)، لتجنب تعرض العمال للإجهاد الحراري.
- توفير وسائل مواصلات مناسبة للعمال/الموظفين لتجنب تفاقم الإجهاد الحراري.
- تحضيرات طوارئ مناسبة وكافية لحماية العمال/الموظفين في حالات الطوارئ.

يجب على جميع الموظفين الالتزام بالمذكور أعلاه بعد مهلة أسبوع من تاريخ صدور هذا التعميم، وعدم الالتزام بذلك يعرض للعقوبات والمساءلة القانونية.

لمزيد من الإيضاحات، يرجى التواصل مع قسم الصحة والسلامة المهنية:

عيسى المعلمي	ehalmuallemi@dm.gov.ae	04-606 6061
سدير مور	sbmore@dm.gov.ae	04-606 6039

مع تحيات

م. رضا سلمان

مدير إدارة الصحة والسلامة

B

UNSAFE CONDITIONS AND FALL FROM HEIGHT ACCIDENTS

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Safety for Sustainability
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UNSAFE WORK AT HEIGHT

Workers working on unprotected platform without fall protection

FALL ACCIDENTS

DEFECT IN WORK PLATFORMS

Cover all levels of the platform with wooden boards (extra weight)

Destabilization of flooring slabs together

FALL ACCIDENTS

DEFECT IN WORK PLATFORMS

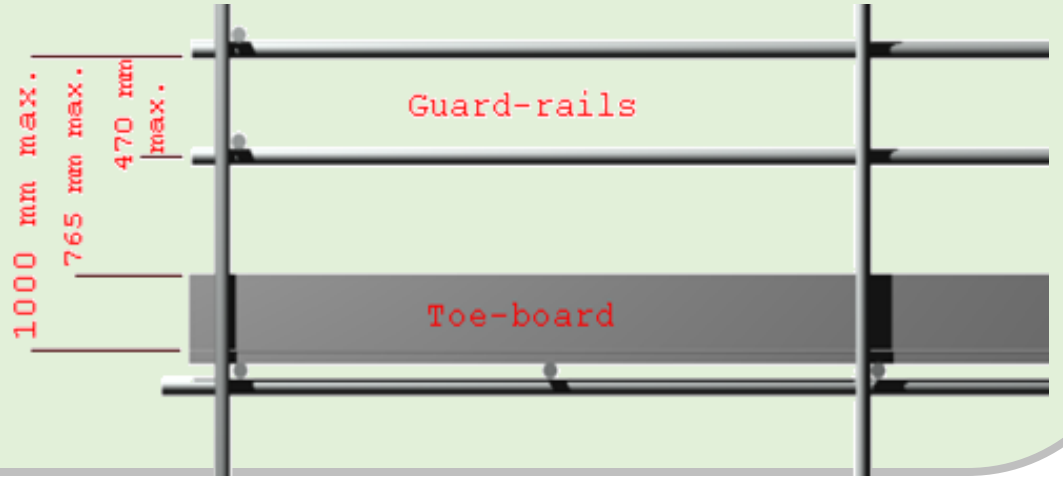
- **Moving** the **Scaffold** even though there are **workers** or **materials** on it
- **Unstable** Scaffold /Structure

FALL ACCIDENTS

- Avoid **make - shift** arrangements instead of appropriate and **suitable ladders**

FALL ACCIDENTS

Fall of workers from the edges of building



FALL ACCIDENTS

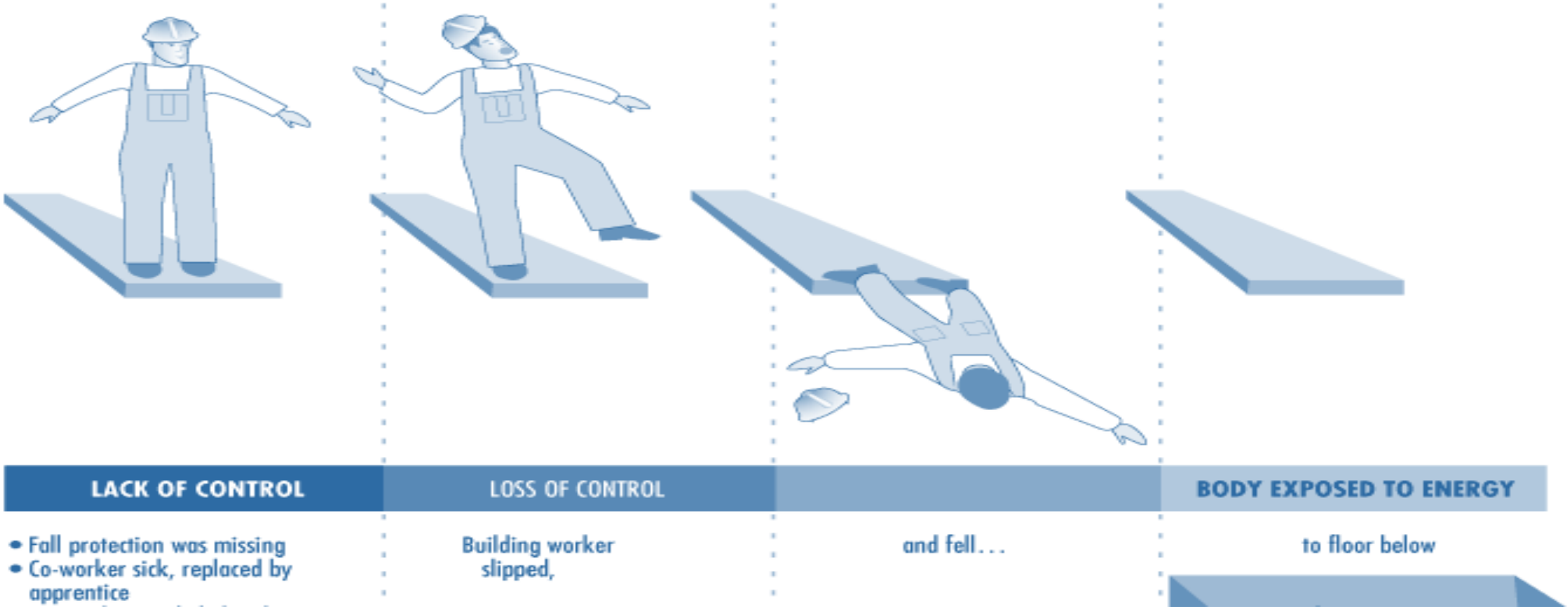
Not covering the floor openings

FALL ACCIDENTS

Not installing external protection or safety nets on the façades

ACCIDENT ANALYSIS(MODEL) FALL FROM HEIGHT

An example of the analysis of an accident based on a model developed by the Occupational Accident Research Unit (OARU) in Stockholm,



Accident prevention is typically accomplished through limitation or control of energies in the system or by interposing barriers between the energies and the victim. (Source-Kjellén and Hovden 1993)

Leading Factors for Fall from Height Accidents

1. Risky Construction

Risky Construction Activities
(e.g. Erecting /Dismantling of scaffolds, Roofing, Painting, Plumbing etc

2. Individual Characteristics

Individual Characteristics
(e.g. demography, knowledge level , human behaviors, health)

3. Site Conditions

(e.g. unprotected walk ways, improper guardrails, slippery or sloped surfaces , unexpected modification in surface properties etc.

4. Platforms /work support agents

Platforms / work support agents (scaffolds- stationary or movable , ladders, MEWP's etc.)

5. Organization

Organization / Management
(e.g. small companies might have improper safety measures /standards)

6. Weather Conditions

Weather conditions (e.g. Regionally construction workers face heat , cold, rain , or windy/dusty weather etc.)

Note : Riskier work is usually conducted by small to medium sized companies rather than by large companies due to job distributions and time planning/economizing. (study out come)

C 1. PREVENTING FALLS

Safety Strategies

1. On site Precautionary measures

Prevention of Guardrails, Safety Nets , Daily inspection checklists,

2. Education and Training

Education on fall protection equipments, fall prevention , MEWP's etc

3. Job Redesign

Suitable Arrangements for redesigning job tasks thus eliminating hazards, automation etc

4. Health Protection

Medical Surveillance Occupational Health Monitoring

5. Safety Promotion

Alerts, Signage's information notices , Awards and Recognitions etc

6. Safety Regulation

Legislations & Internal Organization rules and regulation, SOP's

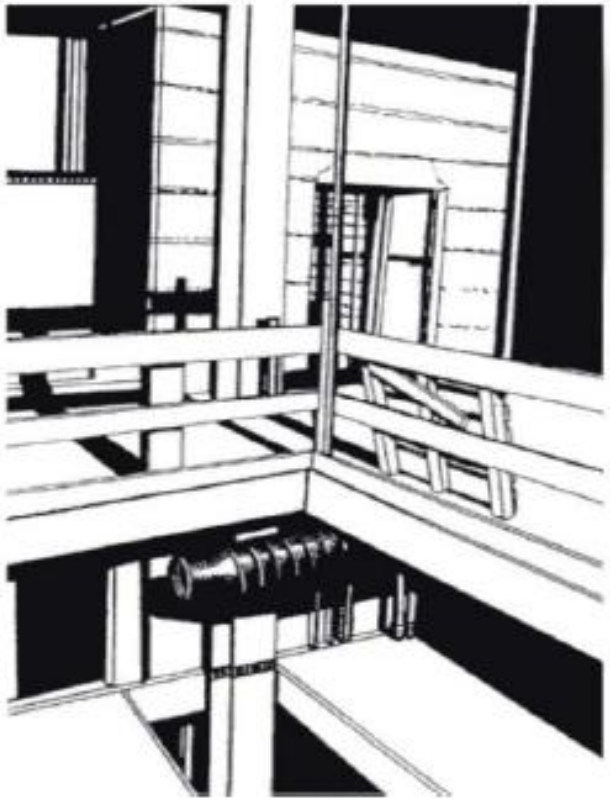
7. Research & Development

Method of working Improvisation etc

GENERAL SAFETY PRINCIPLES OF WORKING AT HEIGHT

Fall of materials

Preventive measures should be taken against the fall of workers and tools or other objects or materials.



Openings

All openings through which workers are liable to fall should be kept effectively covered or fenced and indicated in the most appropriate manner

GENERAL SAFETY PRINCIPLES OF WORKING AT HEIGHT

Ladders

- ❑Make sure that the ladder is long enough for the job.
- ❑Avoid carrying tools or materials in your hand while you are climbing ladders. Don't over-reach.
- ❑Clean your footwear before climbing
- ❑Always inspect your ladder before you use it. Remove damaged ladders from use and make sure that they are properly repaired.
- ❑If they cannot be properly repaired, they must be destroyed.

GENERAL SAFETY PRINCIPLES OF WORKING AT HEIGHT

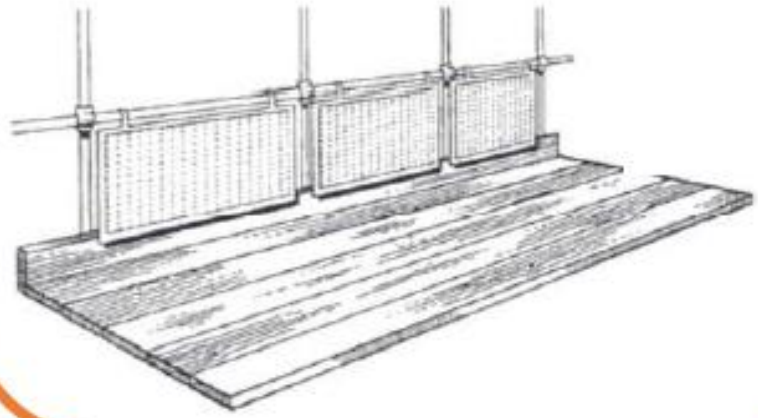
Scaffolding

- ❑ Strongly braced diagonally in two directions
- ❑ Good work platforms
- ❑ Toe boards
- ❑ Ladder tied at top with a clip (look closely)
- ❑ Base plates spread the load on the pavement
- ❑ Red & white warning tape on poles for pedestrians
- ❑ Scaffold extends across roof and over ridge, so tied well to the building
- ❑ Scaffold rests on boards on the roof, so protecting it
- ❑ No ladder at bottom level - scaffolders put it up when working, so there is no easy access to the general public when they are not there
- ❑ Additional lateral bracing across doorway

GENERAL SAFETY PRINCIPLES OF WORKING AT HEIGHT

Working platforms and protection against falling materials and other items

Fully boarded platform with toe boards, handrail and screens

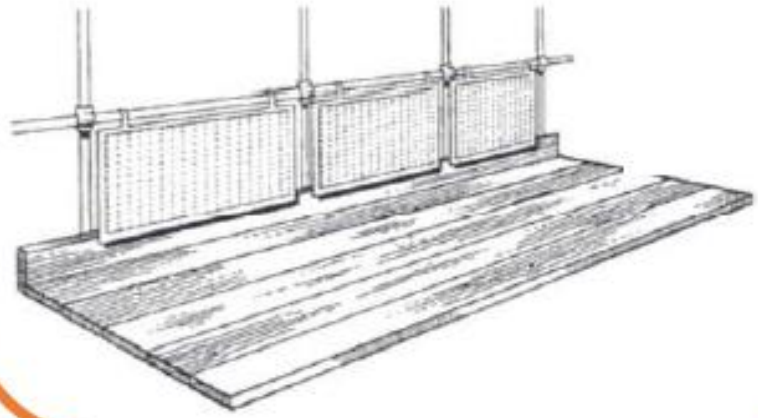


'Safety nets' to catch falling items

GENERAL SAFETY PRINCIPLES OF WORKING AT HEIGHT

Working platforms and protection against falling materials and other items

Fully boarded platform with toe boards, handrail and screens



'Safety nets' to catch falling items

Prevention & Mitigation of Fall From Height Accidents

Controlled Access Zones

Warning Systems

Site Proactive Action

e.g. *guardrail, surface protection , PPE (safety harness) , personnel fall arrest systems*

01

02

03

04

05

06

Minimizing Hazardous agents and Duration

Professionally Set up- Platform / Access equipments

Safety monitoring system

Preventtion & Mitigation of Fall From Height Accidents

01

Design Specific Courses

(eg. Safe Working at height, Handling of Materials at height, Using Fall protection system etc)

02

Training for Unskilled Workers

(OHS Orientation Safe working at height)

03

Training on use construction & Inspection of Scaffold

04

Motivational Programs for Employees to Follow safety regulation

Preventtion & Mitigation of Fall From Height Accidents

01 Frequent revision of safety regulations and regular inspection of sites

02 Continuous assessment of potential risk

03 Systematic research on the behavior or individuals and groups and construction companies

04 Developing scaffolding erection and dismantling methods

05 Improve ergonomics of the workplace (e.g. comfortable temperature, modest humidity , enough illumination level , noise reduction)

06 Mitigating height operations when workers suffer from physical disorders (e.g. excessive fatigue, sleepiness , Depression, etc.)

07 Shorten the period of workers suffering form chronic diseases (e.g. hypertension, heart diseases, anemia , epilepsy etc.,)

08 Displaying signage, banners and posters, safety and health messages etc.

C

2. RELATED CHALLENGES

Present Challenges

Summer Challenges

Multinational peoples are engaged in work

Different culture and language barriers

Less awareness on safety and related culture

Differing Educational levels among the work force

Small contractors

High turnover of workers

Lack of OHS competencies among staff

Lack of sufficient competent safety advice & supervisors

Lack of unified system on safety across the UAE


D
FUTURE PLANS

OHS Control

01
OHS LAW

02
TRAINING

03
COP

04
SUPERVISION

05
TGS

06
SAFETY OFFICER

07
VIDEOS

08
ALERTS

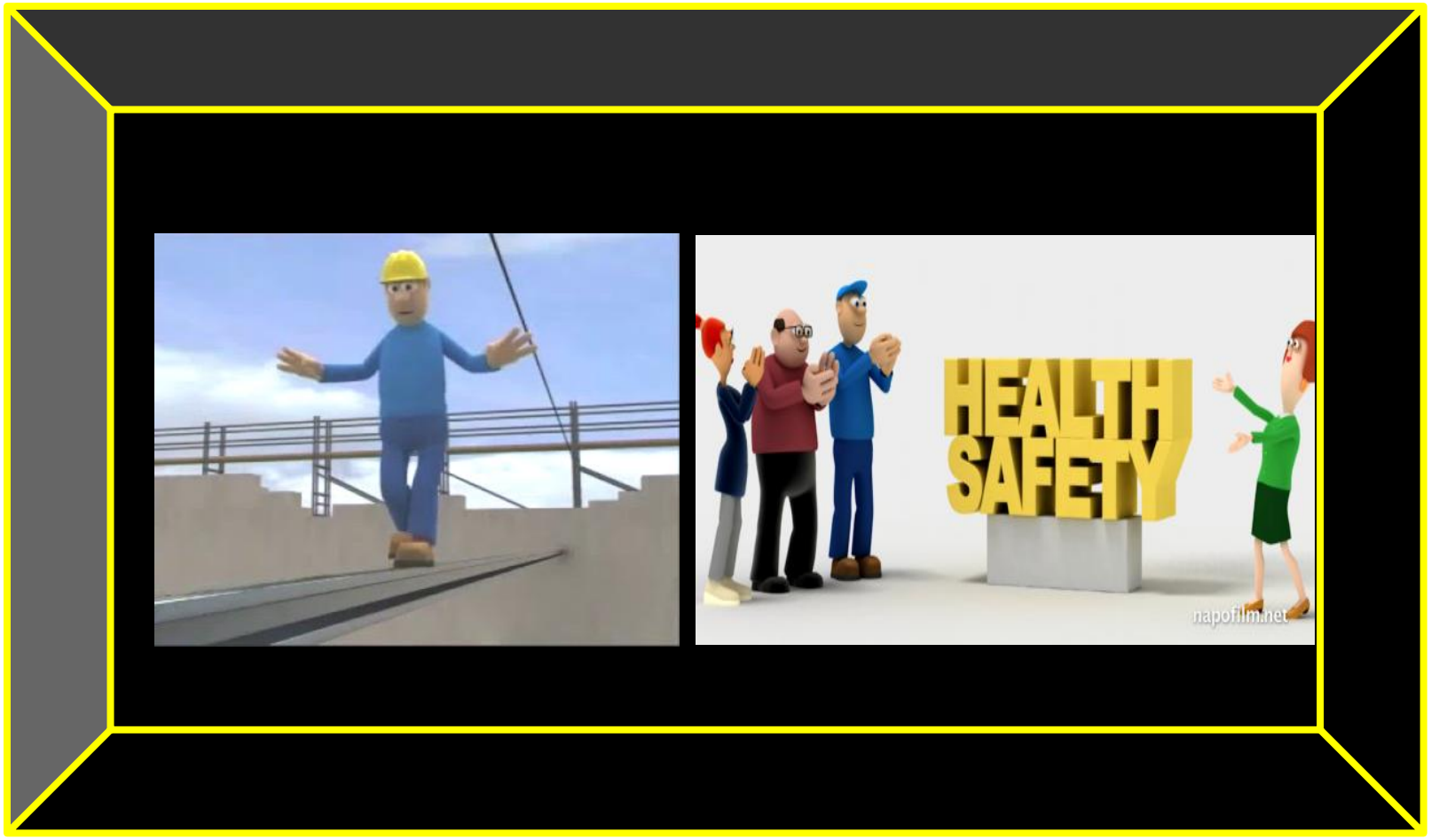
POSTERS- FALL FROM HEIGHTS

NEW POSTERS 2018

NAPO Movies

عـــام زايـــد

YEAR OF ZAYED



As part of Year of Giving and Year of Zayed, UAE

Concept & Financial Support from DM in making of

2 Videos on :

“ HEAT STRESS PREVENTION”

A- Industries

B- Construction

Further information :

For more valuable information:
VISIT THE DM WEBSITE (HEALTH & SAFETY DEPARTMENT)
www.dm.gov.ae

Websites:
--- Health and Public Safety---Health & Safety Publications

الموقع:
الصحة و السلامة العامة ---منشورات الصحة و السلامة

Occupational Health and Safety Section (PHSD)
T: 04-6066010

السلامة من أجل الاستدامة
Safety for Sustainability
An Initiative by Dubai Municipality مبادرة من بلدية دبي

قسم الصحة و السلامة المهنية
T: 04-6066010

Best Wishes
HEALTH & SAFETY DEPARTMENT
Occupational Health and Safety Section

مع أطيب التمنيات
إدارة الصحة والسلامة
قسم الصحة و السلامة المهنية

References:

1 – Model Accident analysis Source-Kjellén and Hovden 1993

2- NOAA, National Weather Service : http://www.nws.noaa.gov/om/hazstats.shtml

CONCLUSION

“ We Look Forward To Making Dubai The Safest City To Work Or Visit”

GOVERNMENT OF DUBAI

DUBAI MUNICIPALITY

THANK YOU!

Wish You All a Happy

Health and Safety

All The Times

& hope you have enjoyed the presentation!!

HEALTH & SAFETY DEPARTMENT

Occupational Health and Safety Section

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