

K.I.S.S.

SIMPLE SOLUTIONS:

INCREASED OR DECREASED RISK?





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CHALLENGES

INFLUENCING FACTORS



- » **Bioterror Preparedness & Response**
- » **Emerging & Re-Emerging Infectious Diseases**
- » **Economic Drivers**
- » **Evolving Regulations**



INCREASED COMPLEXITY



- » **Engineering Systems**
- » **Administrative**
- » **Standard Operating Procedures (SOPs)**
- » **Personal Protective Equipment (PPE)**

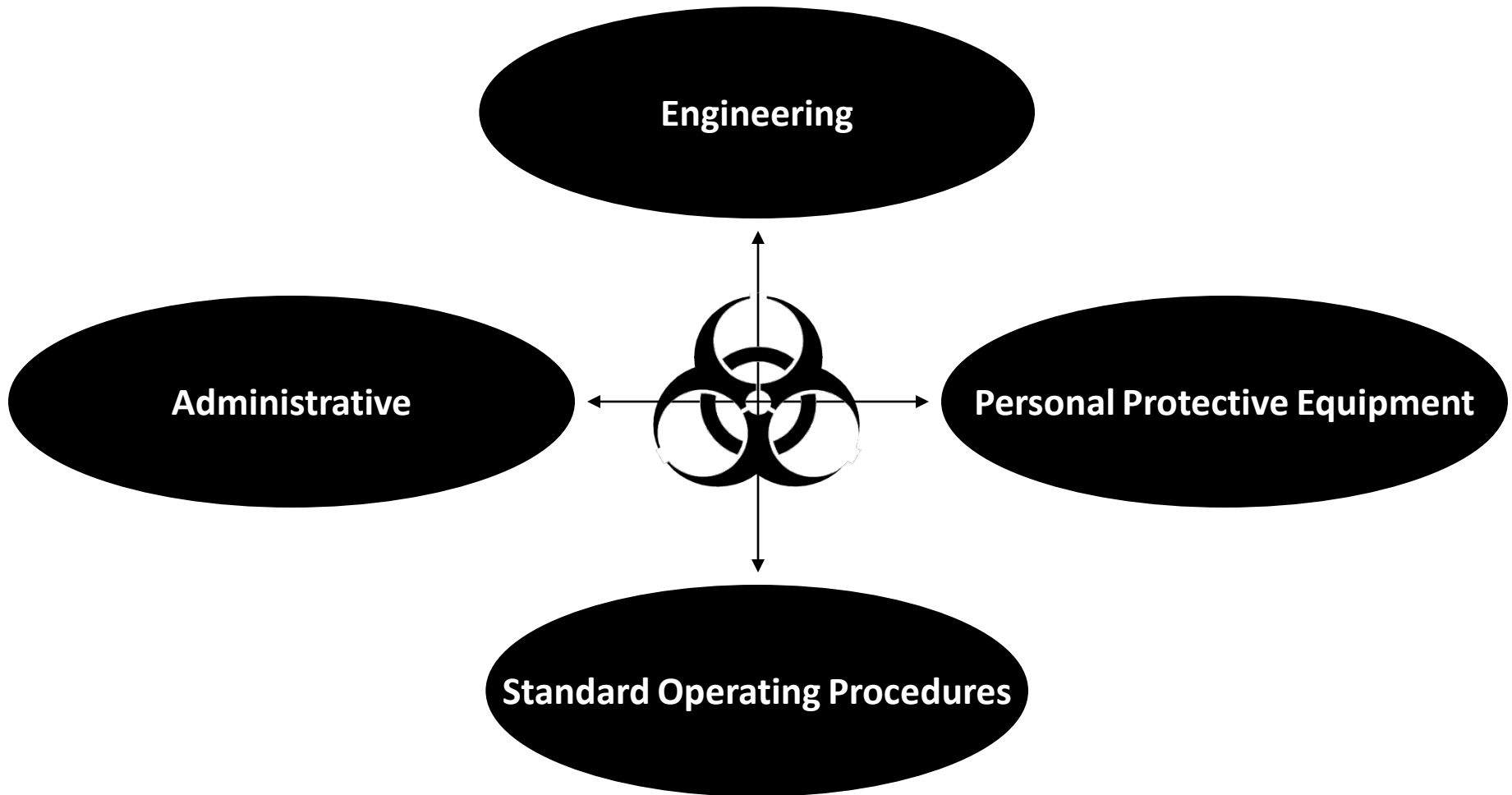


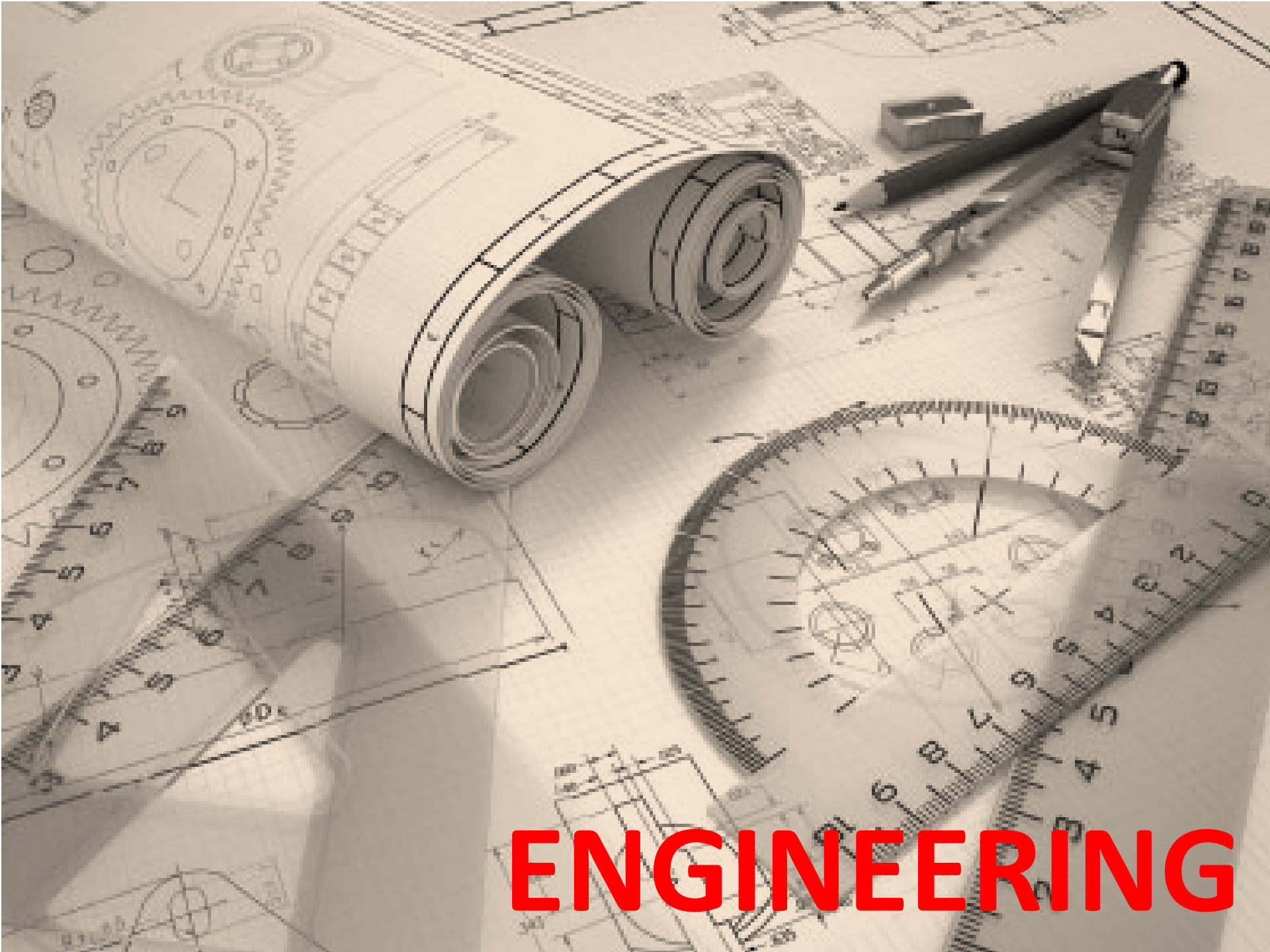
SOLUTIONS

STRATEGY

The four primary controls of biosafety work together to prevent incidental release of infectious agents.

STRATEGY





ENGINEERING

ENGINEERING

Don't ...

- » **Over Complicate**
- » **Use expensive materials**
- » **Use expensive labor**
- » **Use expensive equipment**



VS.



ALWAYS CONSIDER YOUR OPTIONS...

ENGINEERING SOLUTIONS

MATERIALS & EQUIPMENT

- » Local
- » National
- » Regional
- » Global



ENGINEERING SOLUTIONS

HVAC

- » **Air exchange rates**
 - 4-6 ACH
 - 8-10 ACH
 - 12+ ACH
- » **Solar-powered systems**
- » **Natural ventilation?**



Solar Updraft Tower – Manzanares, Spain



ENGINEERING SOLUTIONS

AIRFLOW MONITORING

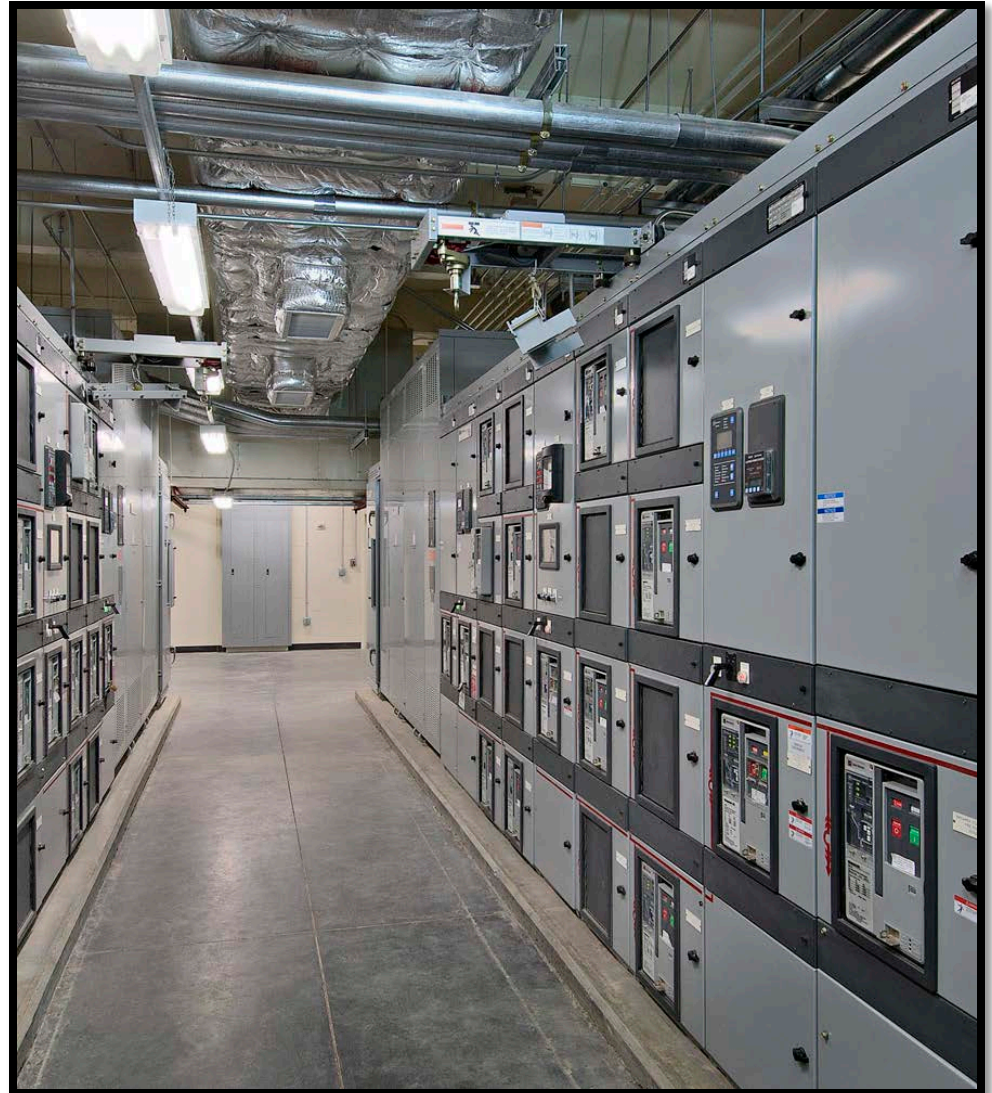
- » Taped “tell-tale” piece of paper
- » Ping pong ball (Baulin Tube)
- » Analog Magnehelic gauge
- » Digital pressure gauge



ENGINEERING SOLUTIONS

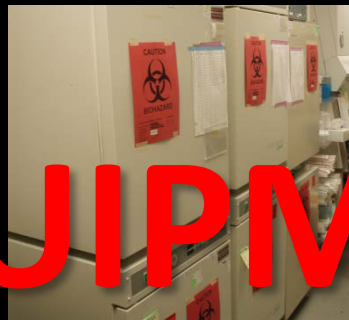
POWER

- » **Single feed**
- » **Dual feed**
- » **Emergency generator**
 - whole building
 - critical systems
- » **House UPS**
- » **Point-of-use UPS**





DESIGN FOR O&M



EQUIPMENT



ADMINISTRATIVE

SECURITY SOLUTIONS

PHYSICAL SECURITY

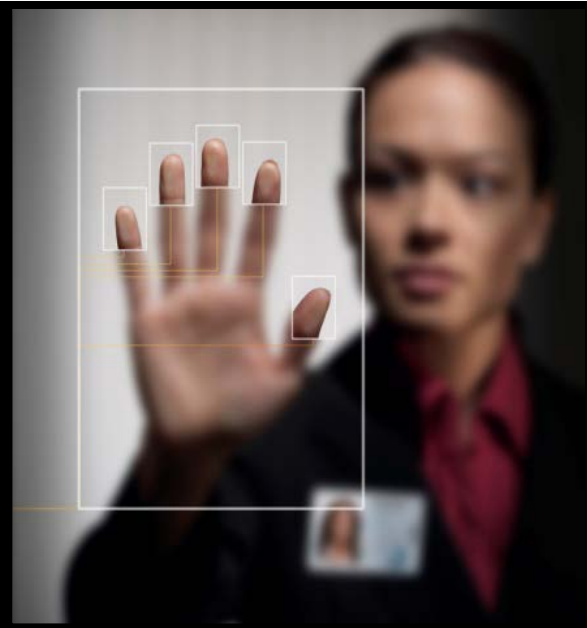
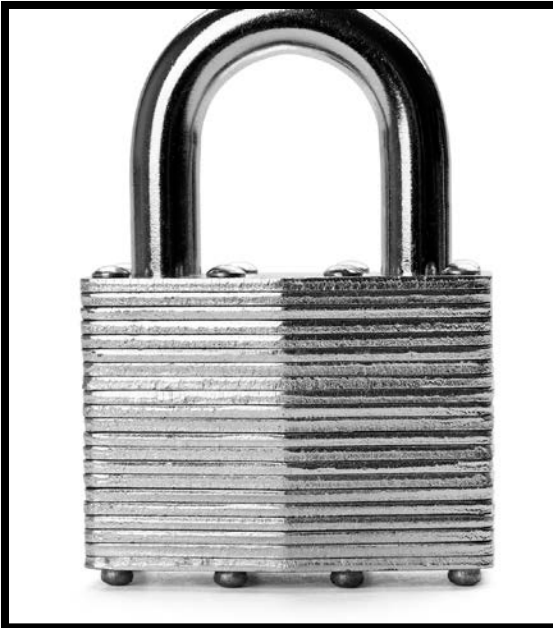
- » Location of the facility
- » Perimeter security (GGG)
- » Signage
- » Notification system(s)



SECURITY SOLUTIONS

ACCESS CONTROLS

- » **Key/combination locks**
- » **Keypad locks**
- » **ID badges**
- » **Biometrics**



SECURITY SOLUTIONS



PERSONNEL MANAGEMENT

- » Identification and selection of personnel
- » Assessments (initial and ongoing)
 - Job specific
 - Personality
 - Suitability
 - Reliability
- » Personnel behavior and interactions
- » Resources
- » Training
- » Background checks

SECURITY SOLUTIONS (Pathogen Security)

SAMPLE STORAGE

- » Seal on a refrigerator/freezer
- » Lockable refrigerator/freezer
 - Key/combination lock
 - Keypad lock
- » High-density storage/walk-in
- » Robotic sample storage and retrieval system



SECURITY SOLUTIONS (Pathogen Security)

INVENTORY CONTROL

- » Paper log books
- » Computer spreadsheets
- » Commercial software
- » Facility-wide database and bar coding system



SECURITY SOLUTIONS (Data Management)



INFORMATION SYSTEM CONTROL

- » Secured location
- » Connected vs. not connected to a network
- » Dedicated internal network
- » Password protection, firewall, VPN connection
- » Limited access

SECURITY SOLUTIONS (Data Management)

UCLA Policy 401 Minimum Security Standards for Network Devices

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Supersedes: New

- I. REFERENCES
- II. INTRODUCTION AND PURPOSE
- III. DEFINITIONS
- IV. STATEMENT
- V. ATTACHMENTS



INFORMATION SYSTEM CONTROL

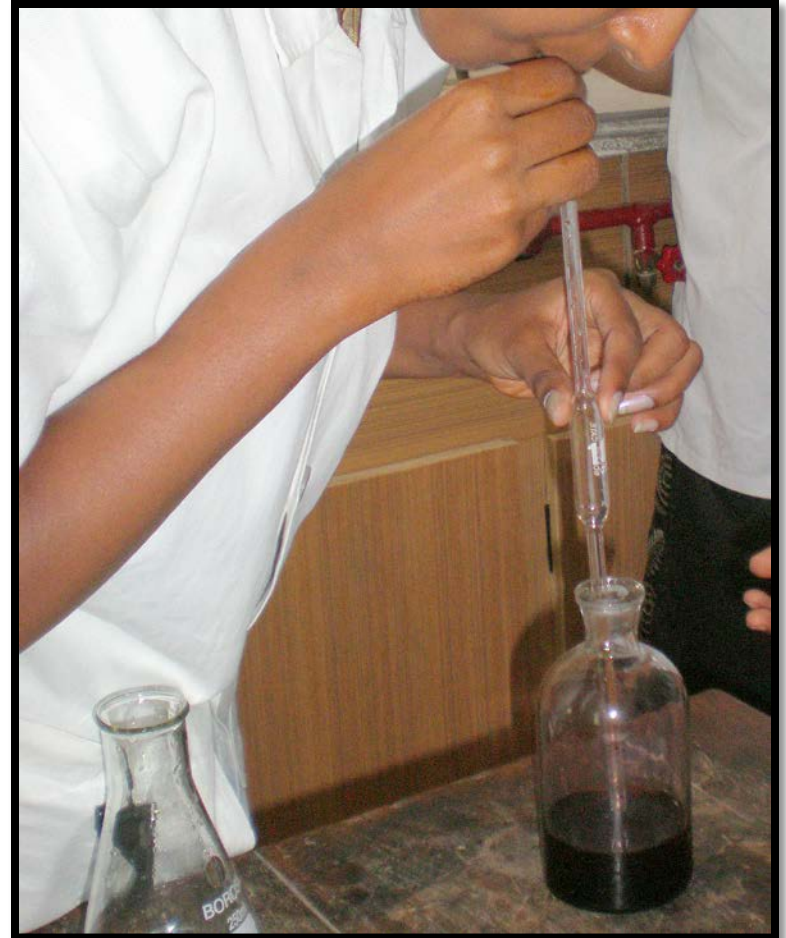
- » **Internal (institutional) IT policies**
- » **Documents sharing and inventory storage**
 - Electronic
 - Non-electronic



STANDARD OPERATING PROCEDURES

SOP SOLUTIONS

- » **Differentiate between policies and SOPs**
- » **Organize your SOPs**
 - general
 - emergency
 - agent specific
 - task specific
- » **Evaluate and validate your SOPs**
- » **Focus on SOPs that can “make a difference”**



THE WAY WE'VE ALWAYS DONE IT...



PERSONAL PROTECTIVE EQUIPMENT

PPE CONSIDERATIONS



- » **Application**
- » **Comfort**
- » **Cost**
- » **Maintenance/replacement**



ONE SIZE DOES NOT FIT ALL...

A photograph of an open cardboard box, viewed from above. The box is made of brown cardboard and is open, revealing a bright blue sky with scattered white clouds through the opening. The text "Think outside the box..." is overlaid in the center of the image.

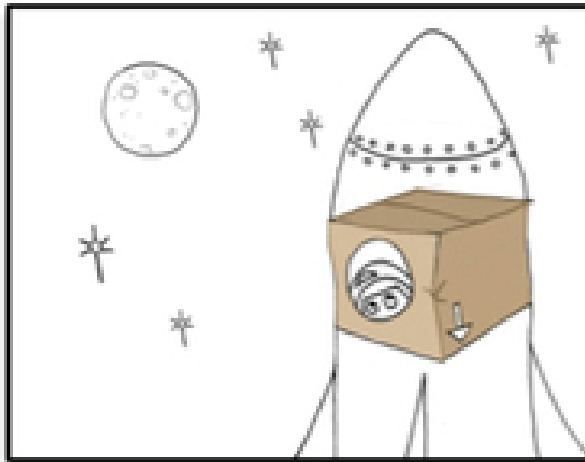
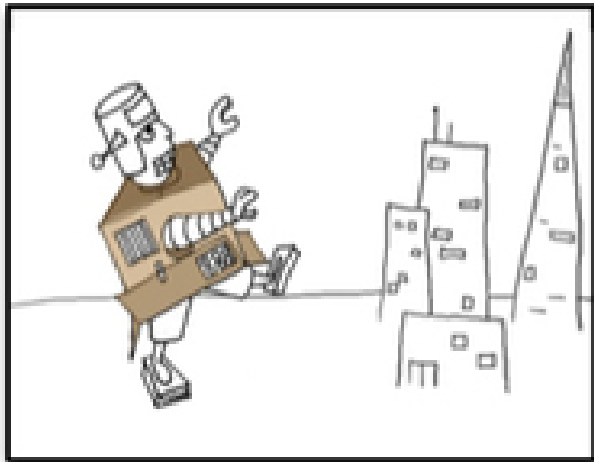
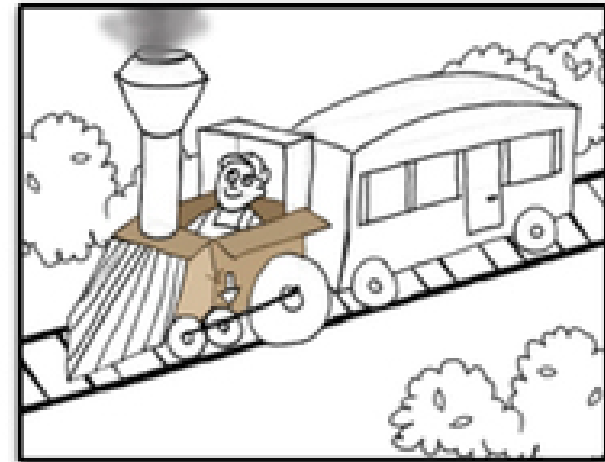
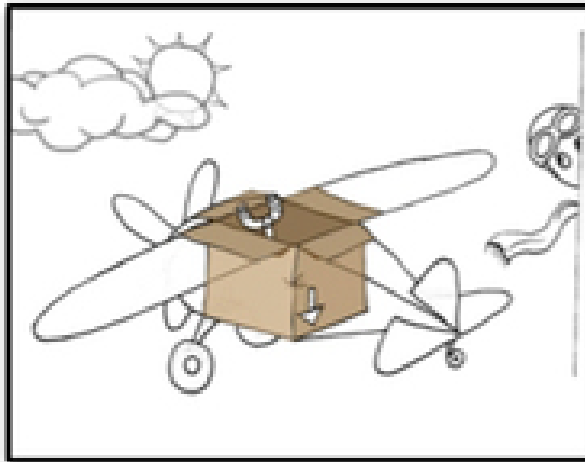
Think outside the box...

BE CREATIVE...

TO YOU, IT'S JUST A BOX...



BUT TO THE MIND OF A CHILD ...



YOUR TURN!



CONSIDER ALL YOUR OPTIONS...

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