Environmental Engineering -
A Look Back & Glimpse to the Future

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A Walk Back in World History.....
History...Environmental Degradation
World Years Ago….Captured in Photos
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World Years Ago....Captured in Photos
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World Years Ago....Captured in Photos

[Images of Rachel Carson and spring ]
World Years Ago....Captured in Photos
World Years Ago….Captured in Photos
Historic Manufacturing Operations
Historic Manufacturing Operations
Historic Manufacturing Operations
Today......Environmental Evolution
Environmental Engineering - Transformational Digital Technologies
Transformational Technologies

• Drones

• FLIR

• Google Glasses

• Robots

• Additive Manufacturing (3-D Printing)
Drones.....
Drones.....
FLIR.....
FLIR.....
FLIR......
FLIR.....
FLIR...
FLIR...
Google Glasses.....
Robots.....
Additive Manufacturing (3-D Printing)…..
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Additive Manufacturing (3-D Printing)
Predictive Analytics

Leading Indicators

Predictive Asset Management

Proactive Preventative Maintenance

Health & Safety

Smart Use of Data
Predictive Corrosion Detection
Future....Environmental Transformation

- Environmental Engineer – New Profile/Skills

- Predictive, Digital Data

- Sophisticated Engineering Controls

- New Technologies (Additive Manufacturing, ++ +)
Q&A