

A collage of images showing the interior of a large tunnel under construction. The images are arranged in a grid pattern, with some images showing the tunnel's curved walls and others showing construction equipment and workers. The overall color palette is dark and industrial.

## AMEC Case Examples in Project Sustainability

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## Summary

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- Introduction to AMEC
- AMEC background in sustainability
  - Guiding principles
  - Recognition of sustainable performance
- AMEC's process for setting project sustainability goals
  - Providing additional value to the client by thinking in terms of sustainable development
  - AMEC staff examine the project for opportunities to incorporate innovative ideas into the project life cycle
- Case examples in project sustainability
  - UK Highways Agency
  - UK Highway M60, Junctions 5 to 8 Widening
  - Heathrow Terminal 5 Construction

## What AMEC does

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- We design, deliver and support infrastructure...  
... from local technical services to international landmark projects...  
...leading the field in project management and services.

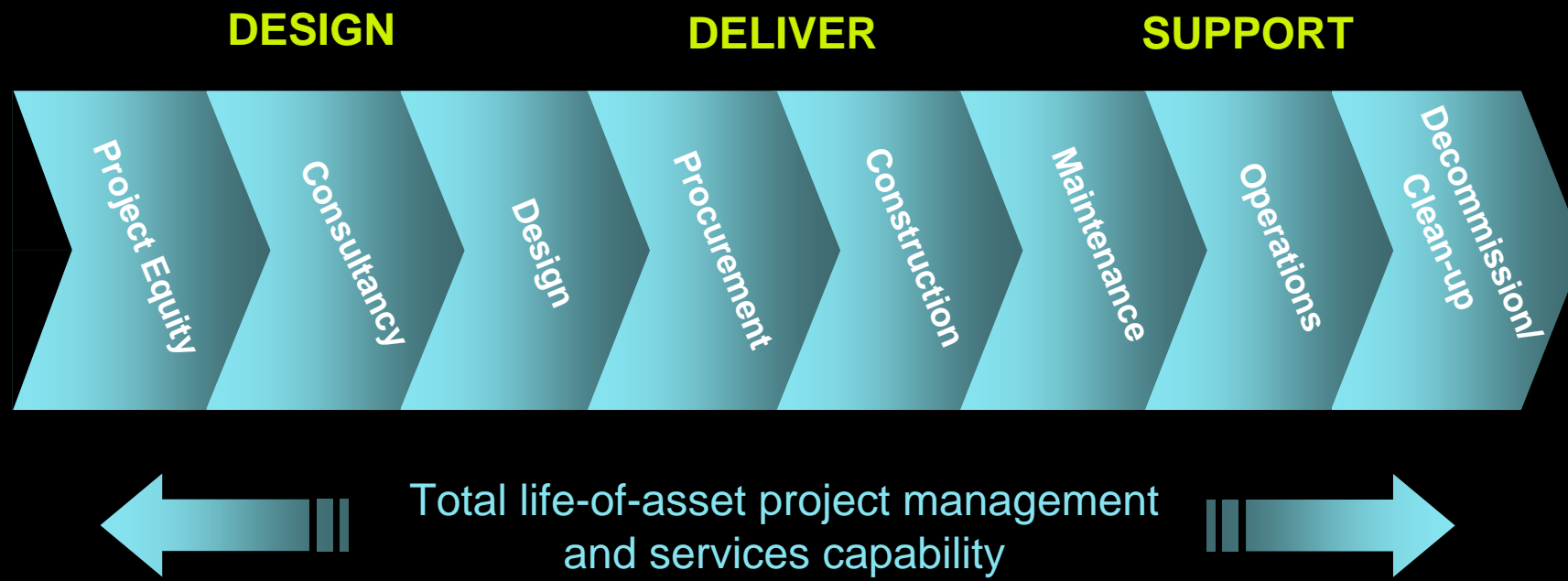
**Worldwide.**

**Responsibly.**

**For the long term.**

# What we do - capabilities

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## World skills on your doorstep

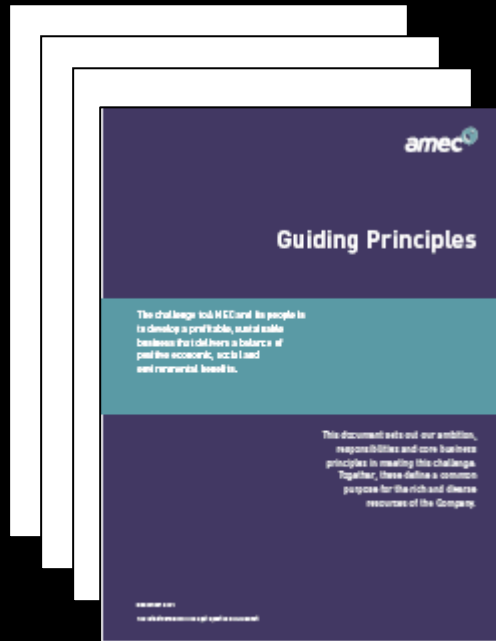
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- We operate in over **700** locations the world over from the Australian outback to the Arctic wastes
- 45,000 employees



# Sustainability Guiding Principles

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1. Entrepreneurial spirit and management rigour
2. Human rights
3. Health and safety
4. Environment
5. Ethical business conduct
6. Cultural diversity in the workplace
7. Community support
8. Innovation
9. Openness and Transparency

## Dow Jones Sustainability Index (DJSI)

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Listed in the DJSI Construction Sector as the leader in sustainable performance

### World Index

- Sector leader

### Pan European

- Sector leader



## AMEC's Client Sustainability Services

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- Business analysis
  - Assist clients in reviewing their businesses and identifying sustainability goals
- Sustainability gap analysis
  - Review client operations to assess procedures and progress towards sustainability goals
- Project assistance
  - Assist clients in achieving sustainability goals during the project life cycle



## AMEC's Process for Achieving Project Sustainability Goals

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- Multidisciplinary brainstorming session
  - Environmental, sustainable development and project representatives participate in facilitated workshops
- Continuous improvement
  - Look for opportunities, applying standard approaches
    - Save energy, materials
    - Improve schedules
    - Reduce cost and risk to client
    - Enhance the value of the project to the client
  - Look for opportunities for innovation
    - Business processes
    - Products and materials
    - Tools and techniques

## AMEC's Process for Achieving Project Sustainability Goals

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- AMEC Product Development and Training (Innovation) Centre
  - Key element is teamwork
  - Work closely with customers and suppliers
  - Harness creativity of AMEC engineers, delivery teams and suppliers
  - Devise solutions that deliver improved
    - Value
    - Quality
    - Safety
    - Sustainability
    - Schedule

## AMEC's Process for Achieving Project Sustainability Goals

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- Ensure continuous improvement and learning
  - Breadth and depth of experience with a wide variety of clients used as a platform for learning
  - Draw from a wide geographic base
  - Apply outputs from AMEC Innovation Centre, focusing on continuous improvement opportunities
  - Feedback mechanisms are in place to ensure lessons learned are incorporated into project planning
- Specialist skills in house.
  - Human environment group assists with social / cultural aspects of projects

## Case Examples in Project Sustainability

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- UK Highways Agency
- UK Highway M60, Junctions 5 to 8
- Heathrow Terminal 5 Construction

## UK Highways Agency

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- Project Description
  - Original scope of work: move a high pressure gas pipeline to accommodate highway embankment widening
- AMEC's solution
  - Leave the pipeline in its current position
  - Strengthen the embankment to eliminate the need to move the pipeline
- Results
  - Risk reduction
    - Reduced the risk of accidents, exposure of the population
  - Cost reduction
    - Saved £ millions in project costs, disruption costs
    - Shortened the project schedule by 18 months
  - Value enhancement
    - Reduction in public disruption, vehicle emissions, greenhouse gas emissions, energy use
    - Enhanced the reputation of the Agency

## UK Highway M60, Junctions 5 to 8

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- Project Description
  - Original scope of work
    - Demolish and replace three bridges at a highway interchange
    - Provide an additional lane in each direction
  - Challenges
    - Constrained by existing motorway, immovable topographical features
    - Needs to pass through 12 landfill sites and areas with deep alluvium deposits

## UK Highway M60, Junctions 5 to 8

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- AMEC's solution
  - Reuse the existing bridges by joining them together
    - Resulted in a reduced schedule, and both safety, regulatory and environmental risk
    - The client realized a saving of £4.5 million
  - Recycling/reuse of site-won wastes
    - Ash / glass landfill material – used as general embankment fill.
    - Redundant asphalt pavements – cold milled for reuse in the new pavement.
    - PFA – reused as fill to bridges / lightweight embankment fill.
    - Timber / trees – Shredded for used in embankment fill.
    - Polystyrene fill – Surplus / off cuts returned to supplier for reuse.
    - Demolition waste – crushed for use in motorway construction.

## UK Highway M60, Junctions 5 to 8

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- Results
  - Risk reduction
    - Reduced the risk of accidental releases into the aquatic environment
    - Reduced the need for additional environmental protection measures
  - Cost reduction
    - Saved £4.5 million in project costs, energy costs
    - Lessened the disruption time for local residents
    - Permitted faster construction of the new, required facility
    - Recycled/reused 25,000 tons of waste materials
    - Sourcing of recycled materials: recycled plastics for curb/drainage units
  - Value enhancement
    - Reduction in public disruption, vehicle emissions, greenhouse gas emissions, energy use
    - Enhanced the reputation of the client



## Heathrow Terminal 5 Construction

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- Project Description
  - Responsible for the design, engineering and installation of mechanical and electrical services in main terminal building
  
- AMEC's project approach
  - AMEC's Project Improvement Process reduced the project schedule by 6 months
  - Off-site modularization, other projects enhancements from the AMEC Innovation Centre

# Heathrow Terminal 5 Construction

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- Results
  - Risk reduction
    - Increase in control of project quality through modularization
    - Reduction of project workforce at Heathrow resulted in a reduction of the risk of accidents
    - Innovative construction practices increased safety and construction efficiency
  - Cost reduction
    - Decrease in fuel requirements associated with construction practices, schedule reduction
    - Increased HVAC efficiency due to plan modifications made by AMEC engineers
  - Value enhancement
    - Reduction in the operations and maintenance costs
    - Increased value of the plant due to design modifications and innovations

## Additional Information

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