



# SMART FUTURES

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MECHANICAL ENGINEERING

St. SEAN'S, Kells

Dundalk Institute of Technology





# WHAT IS A MECHANICAL ENGINEER?



[www.ictireland.ie](http://www.ictireland.ie)

[www.steps.ie](http://www.steps.ie)



**ΦSTEPS**  
ENGINEERS IRELAND

Do they fix  
washing  
machines?



[www.ictireland.ie](http://www.ictireland.ie)

[www.steps.ie](http://www.steps.ie)





Design of Energy-Conscious Machines  
Reduction in power consumption  
Reduction in water usage



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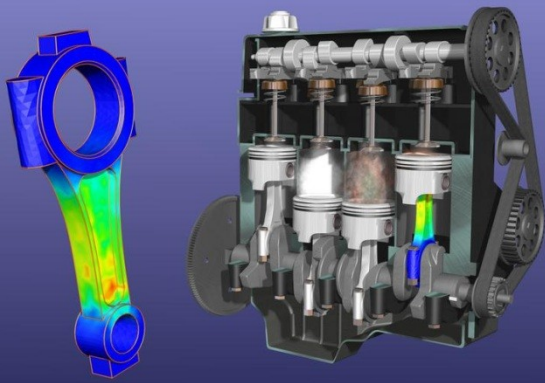
$\Phi$ STEPS  
ENGINEERS IRELAND

Do they work  
on cars?



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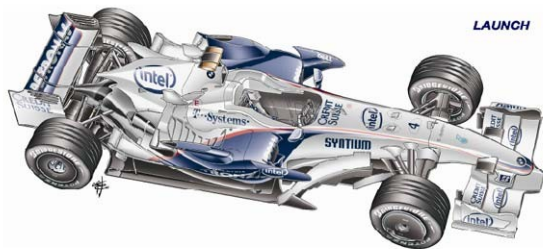
Engine Components



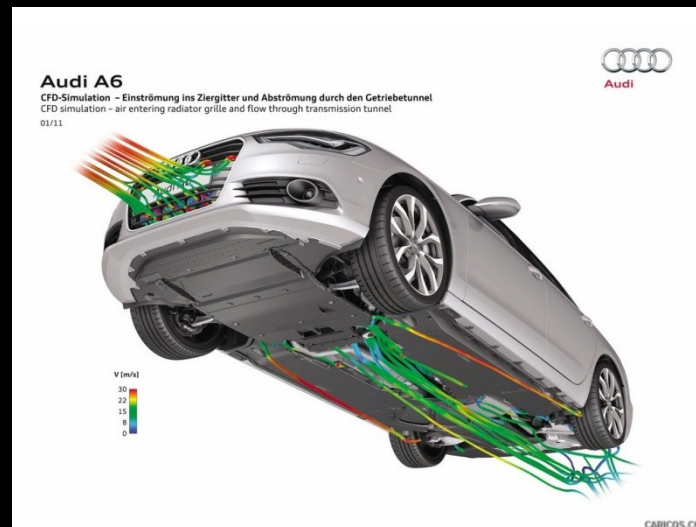
Energy Efficiency



Design of Cars...



F1 Design



Aerodynamics



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 **MOFFETT**







 **Multihog**



 **STEPS**  
ENGINEERS IRELAND

...Local  
vehicles

Monaghan & Dundal



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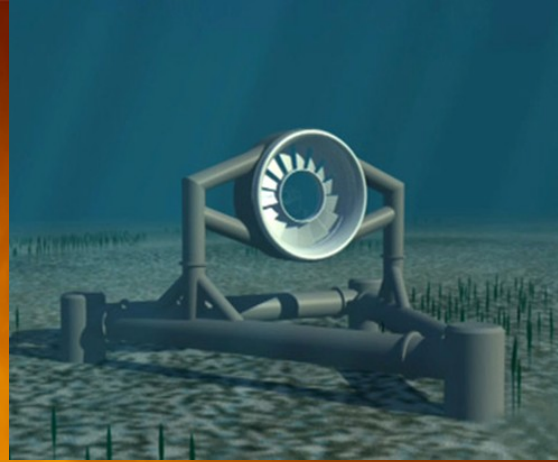


# Mechanical Engineering - Medical

## Devices



**THERMO**MAX



**STEPS**  
ENGINEERS IRELAND



Future employment for Mechanical Engineering

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## ENVIRONMENTAL FRAMEWORK

- The Irish government aims to have 30% of electricity generated by renewable sources by 2020
- Carbon neutral by 2035

What do  
Government say?



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# What will I study as a Mechanical Engineering student?

Energy Transfer

Materials Properties & Design

Machine Design

Computer Aided Design & Manufacture

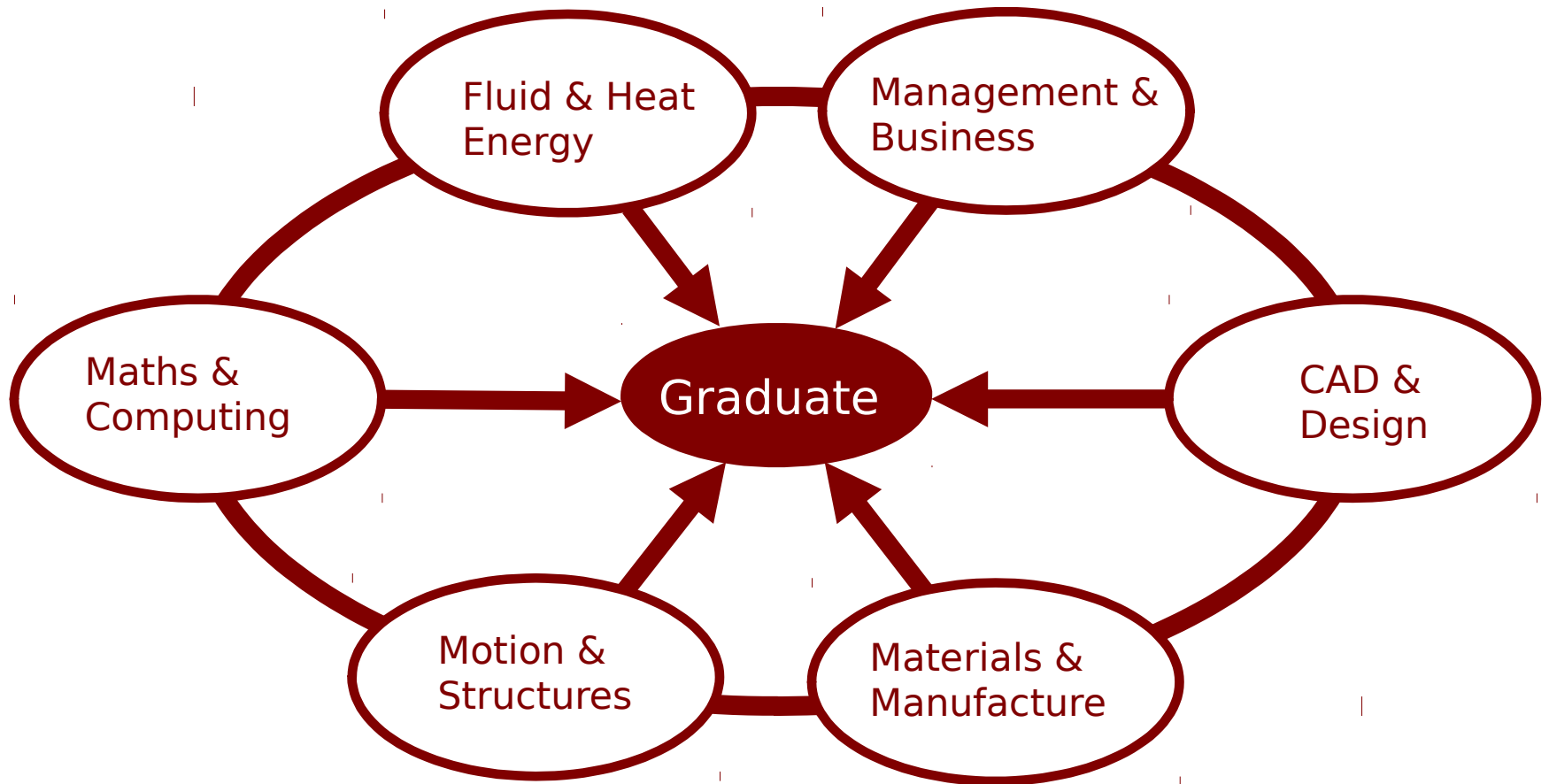
Management & Costing

Individual & Teamwork;  
Communication skills

# What will I study as a Mechanical Engineering student?

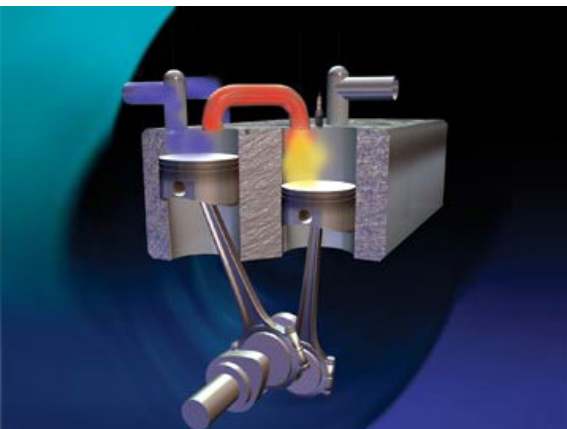
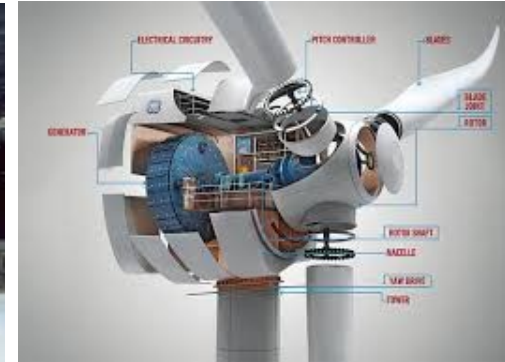
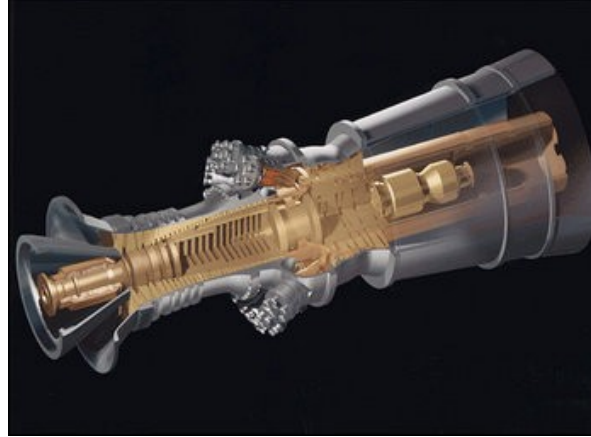
- MATHS
  - Entry – C3 or higher at Ordinary Level
  - DkIT approach = Maths support for students
  - Tutorials; Practical Application
  - Student Maturity

# Overall Graduate Formation

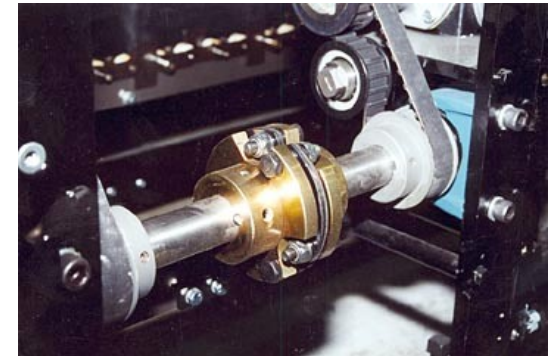
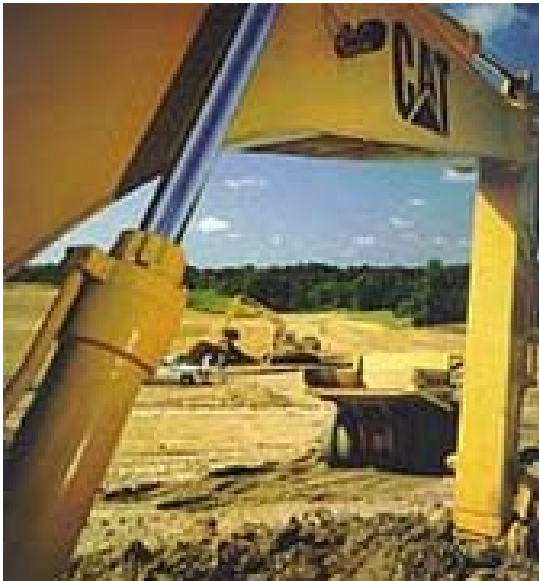




# Study - Fluid & Heat Energy

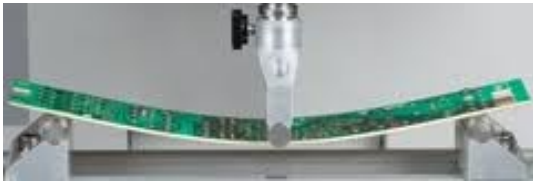
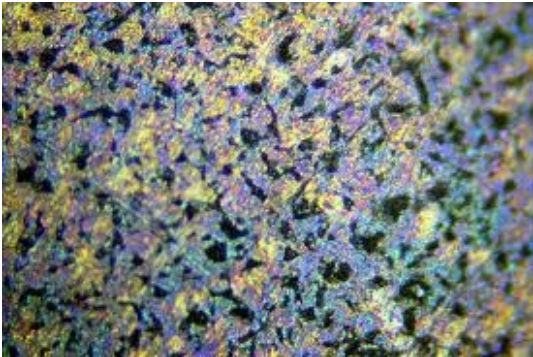
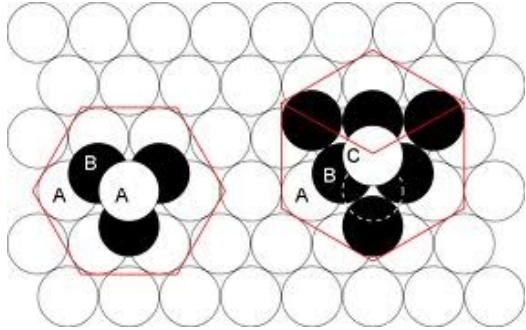


# Study – Motion & Structures

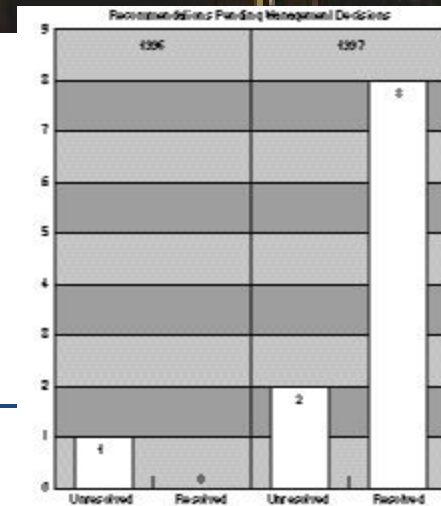
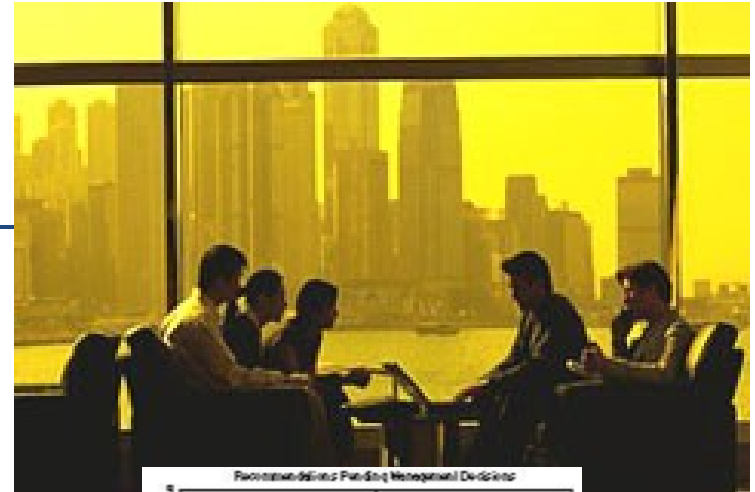




# Study – Materials & Manuf

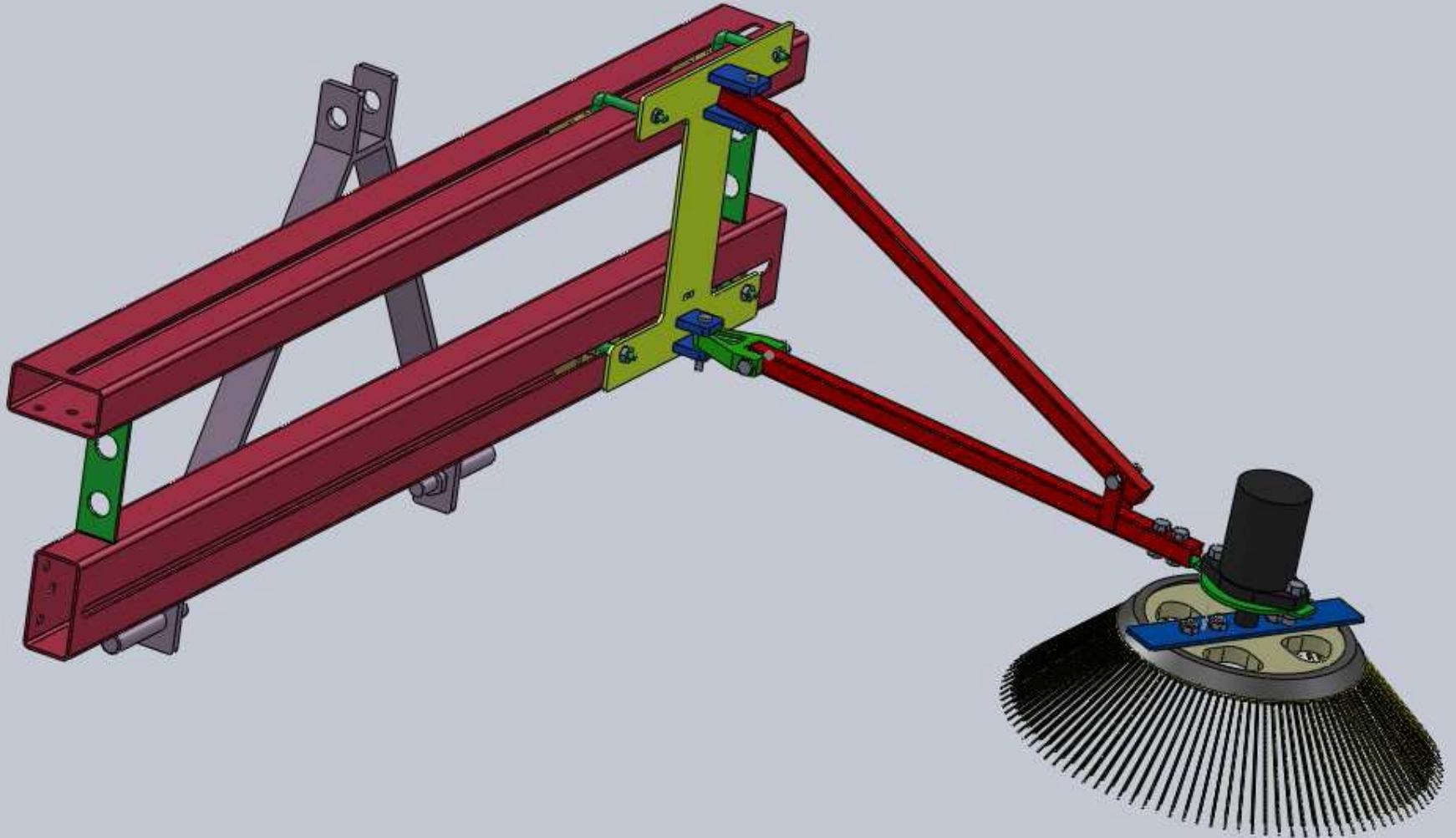


# Study – Management & Business





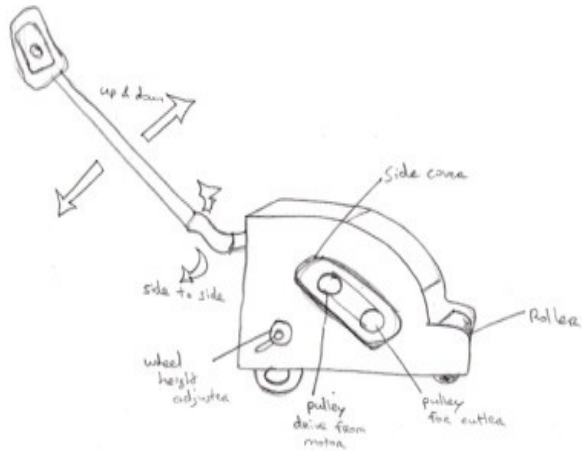
# CAD & Design - Powered Brush



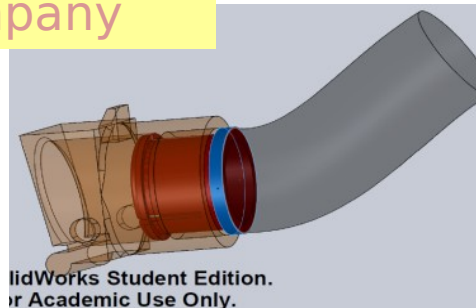
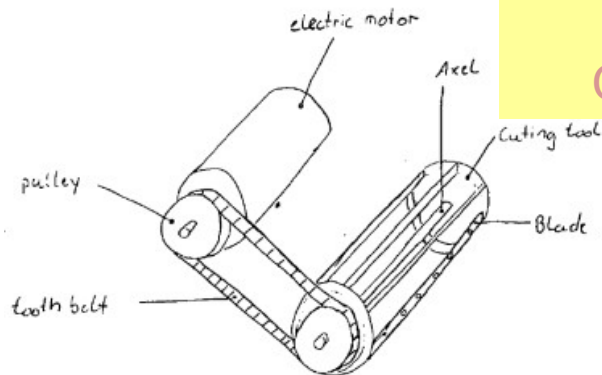
# CAD & Design - Energy Recovery / Exercise



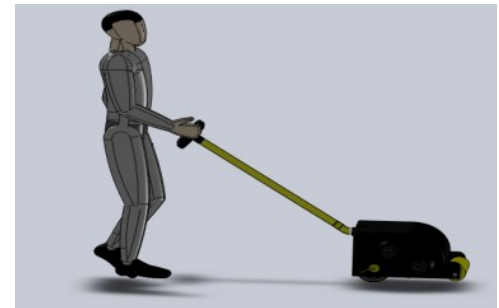
# CAD & Design - Manoeuvrable Lawnmower



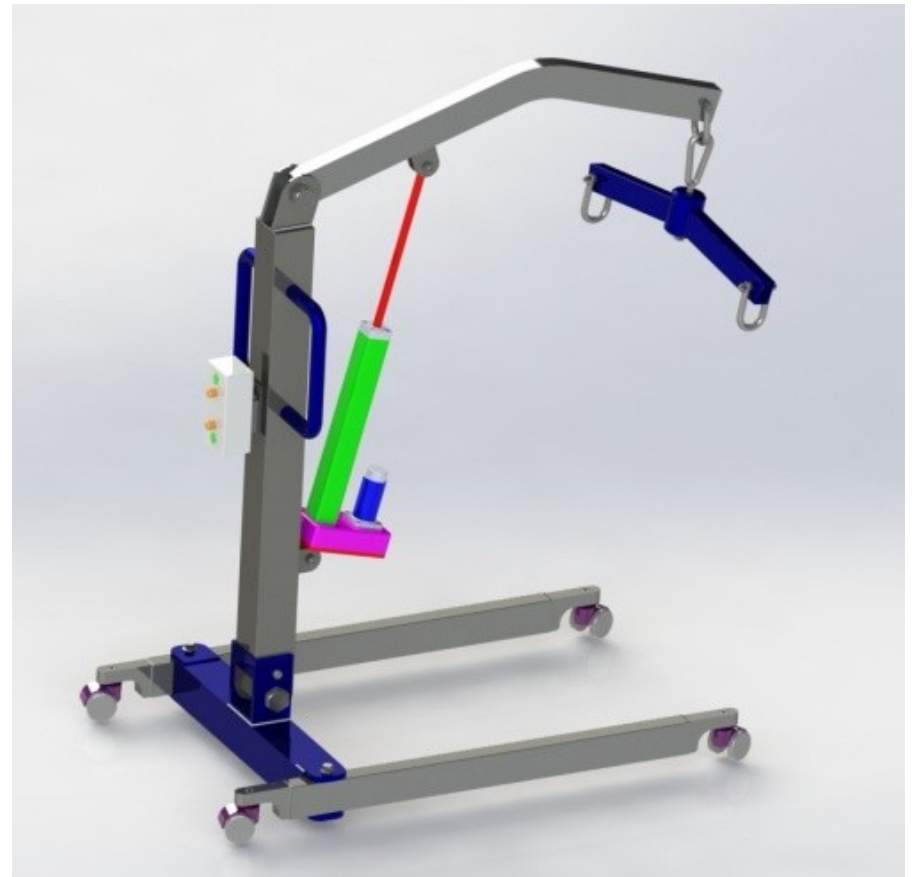
The Bizzee  
Lizee  
Company



lidWorks Student Edition.  
or Academic Use Only.

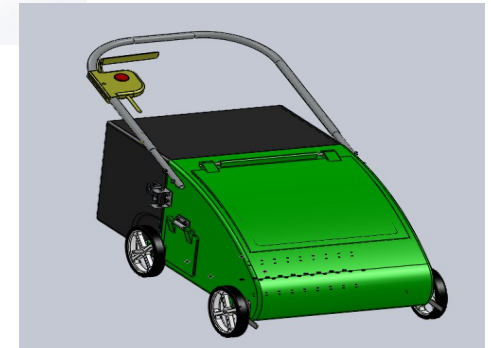
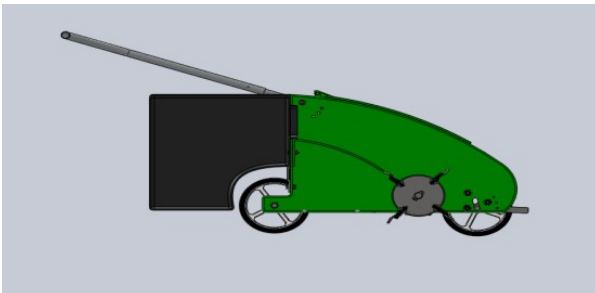
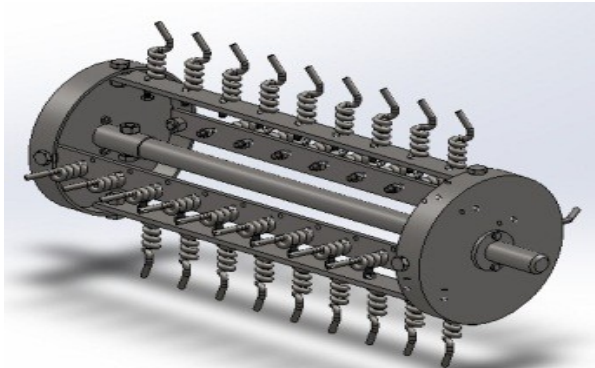
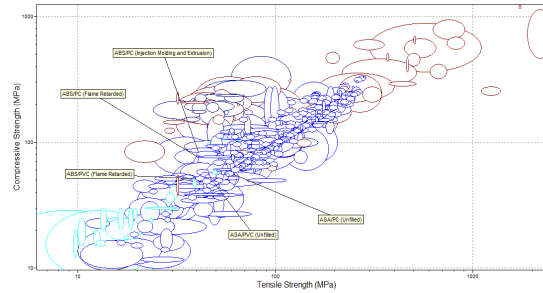
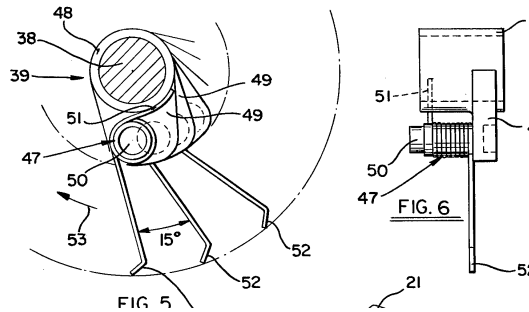


# PROJECTS - Folding Medical Hoist

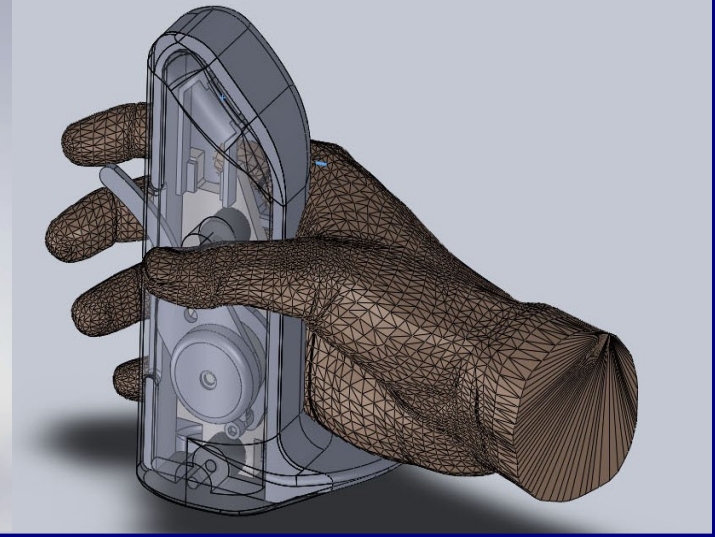
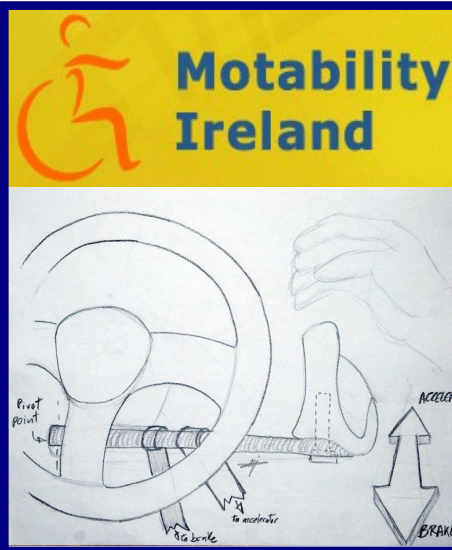
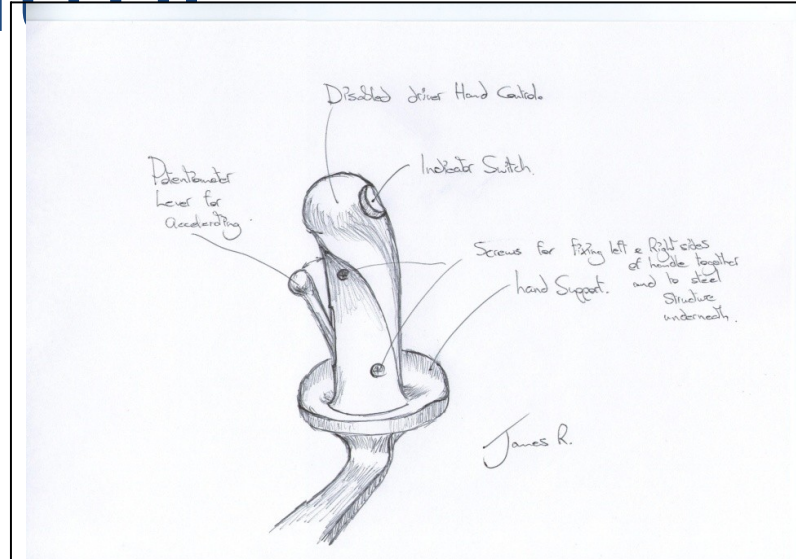




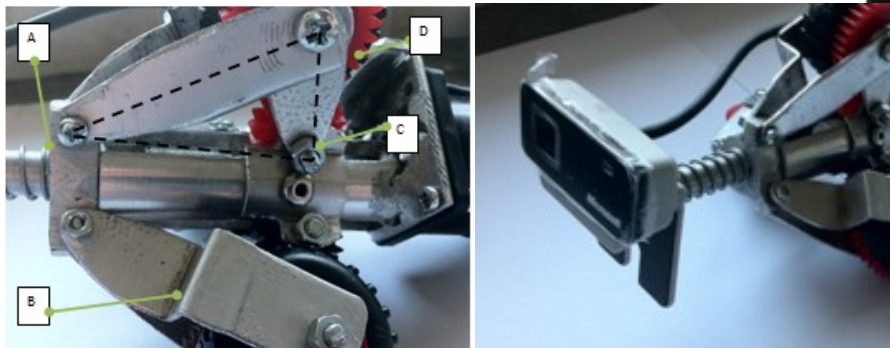
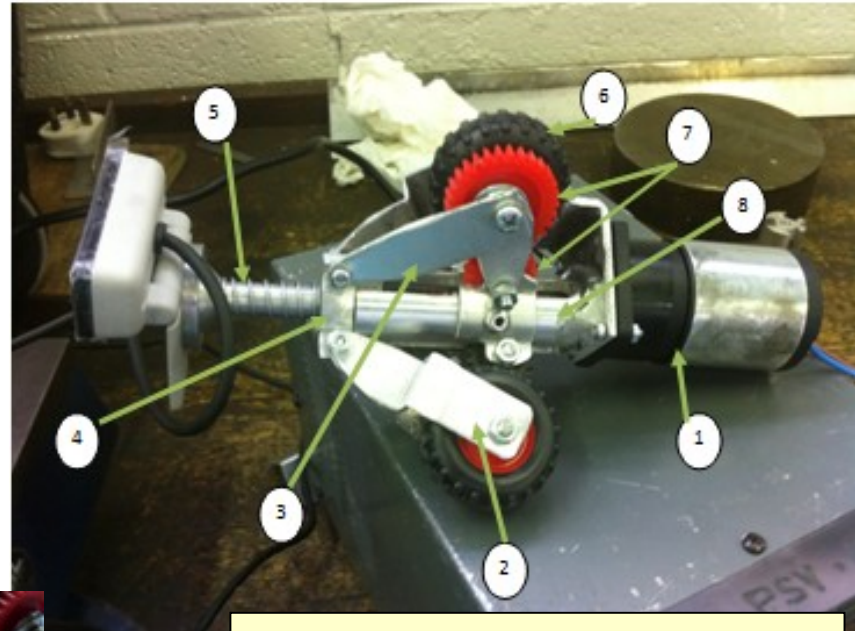
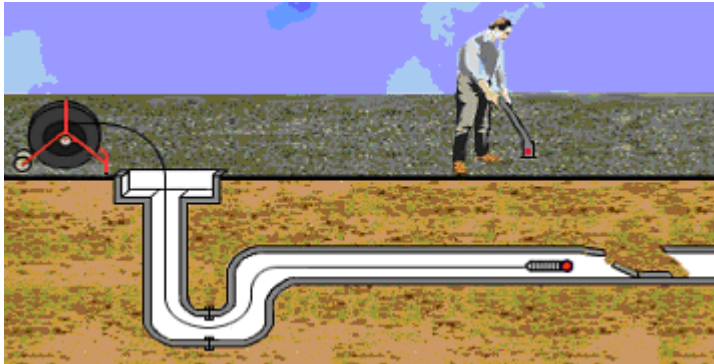
# CAD & Design - Garden Waste Collector



# CAD & Design - Driver Control



# CAD & Design - Pipe Mole



## DESIGN BRIEF

- Inspect Standard pipes
  - Travel in all directions
  - Plastic - Clay
  - Waterproof
  - Negotiate junctions

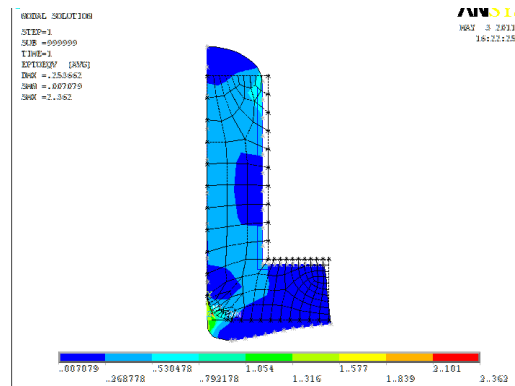
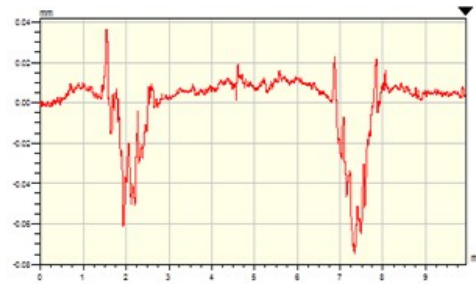




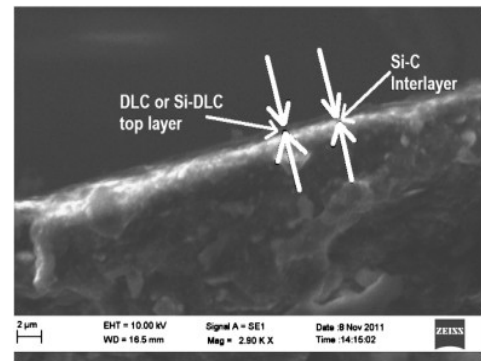
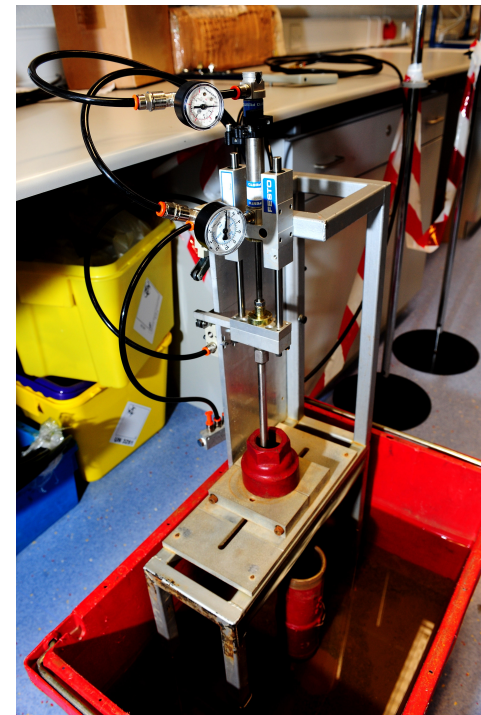
**Rural  
Uganda /  
MUK**



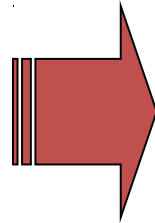
X Profile



**WATER IS LIFE  
Research  
Cluster**



**DKIT /  
DCU**



# Industry Projects



**EMS WASTE LTD.**

**Optical Sorting of Waste**  
Collaboration with  
Electronics



**MALLAGHAN ENGINEERING**

**Aircraft Ground Support**  
Production Flow Control

# DKIT

# EXTERNAL

Level 7 Degree in Mechanical Engineering (3 years)

*Trinity College Dublin; Dublin Inst. Of Tech.; Dublin City Univ.; Queen's Univ.*

Level 8 HONOURS Degree in Eng. **Entrepreneurship** (+1 year)

Level 8 HONOURS Degree in **Sustainable Design** (+ 1 year)

Level 8 HONOURS Degree in Mechanical Eng. (+2 years)

Level 9 MASTER'S Degree in **Renewable Energy** (+ 2 years)

Level 9 MASTER'S Degree in Mechanical Eng. (+2 years)

Level 10 DOCTORAL Degree in Mechanical Eng. (+3 years)





# SMART FUTURES



For a dynamic professional career  
choose Mechanical Engineering

## Questions?

[www.dkit.ie](http://www.dkit.ie)

[Kimmitt.sayers@dkit.ie](mailto:Kimmitt.sayers@dkit.ie)

