Fitting the job to the person
Ergonomics in practice

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Hu-Tech Ergonomics Human Factors

www.hu-tech.co.uk

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Ergonomic by:

- Definition
- Standards
- Design
- Practice

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Ergonomic by definition:

- ***Ergonomics***: application of scientific information concerning humans to the design of objects, systems and environment for human use.
- ***Ergonomic design***: way of considering design options to ensure that people's capabilities and limitations are taken into account.

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Ergonomic by Standards:

- BS EN ISO 9241: Ergonomic requirements for office work with visual display terminals (VDTs)
- EN ISO 6385: Ergonomic principles in the design of work systems

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Ergonomic by design:

- Designed to scientific data
- Designed around the needs of the user but with the business requirements paramount
- User test/fitting trials
- Intuitive
- Inclusive

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Case Study 1:

- Concept open plan but secure banking environment
- Architect, Property services, IT, shopfitters, h&s, outside suppliers

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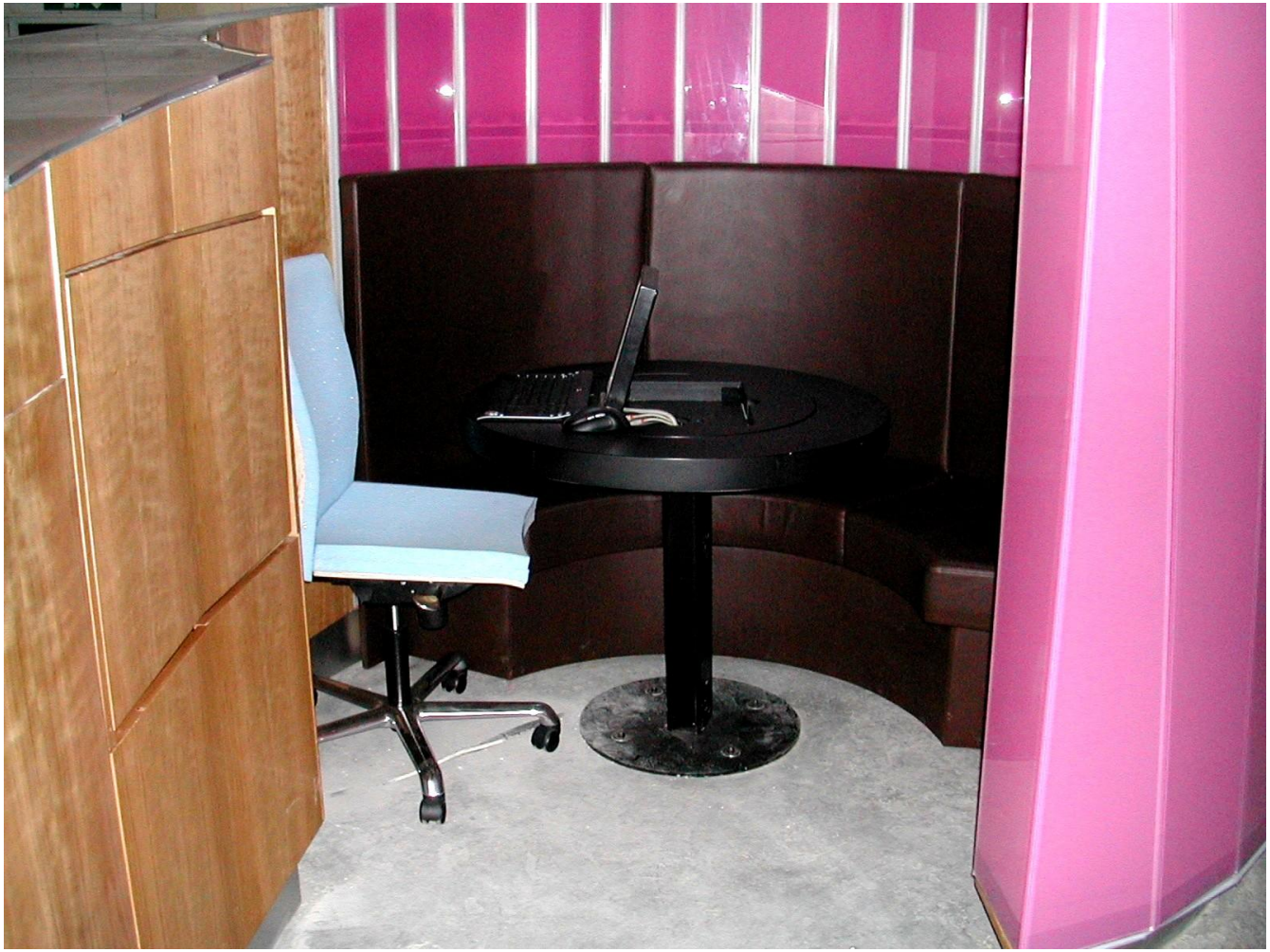
Design – architect's concept :



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Design – after input :

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Design – final installation :

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Case Study 2:

- Replacing passport checking workstation
- No architect, property services at each port, IT, h&s, outside suppliers

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Before – box style workstations:

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Works requirements:

- Security
- Workstation height - sit & stand desk
- Front Presentation
- Shrouded UV lamp
- Space for processing paperwork
- Storage space
- Signage
- Demarcation behind desks
- Communication to command centre
- Comfortable adjustable seats

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Workstation design specification:

UKIS Ergonomics Desk Specification

For:
The United Kingdom Immigration Service

By

Hu-Tech Ergonomics
March 2005

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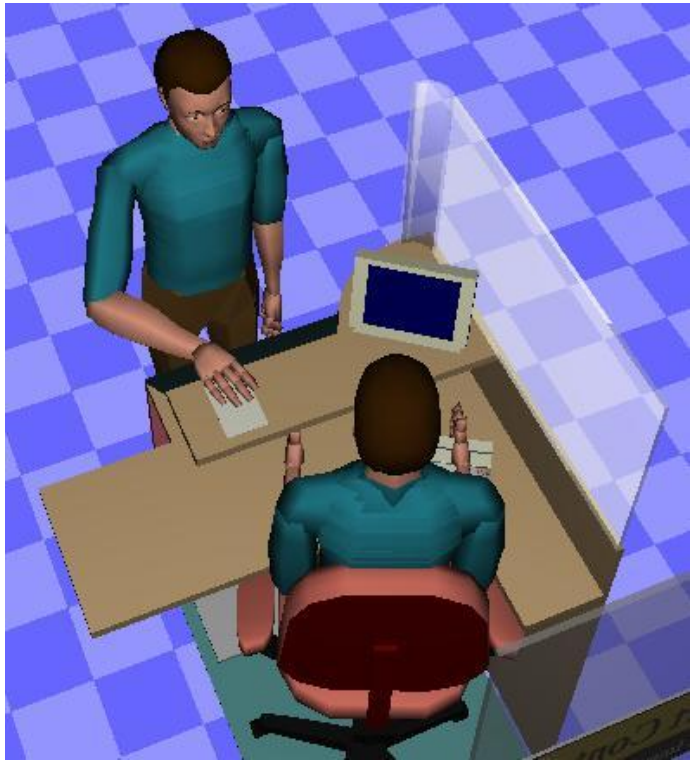
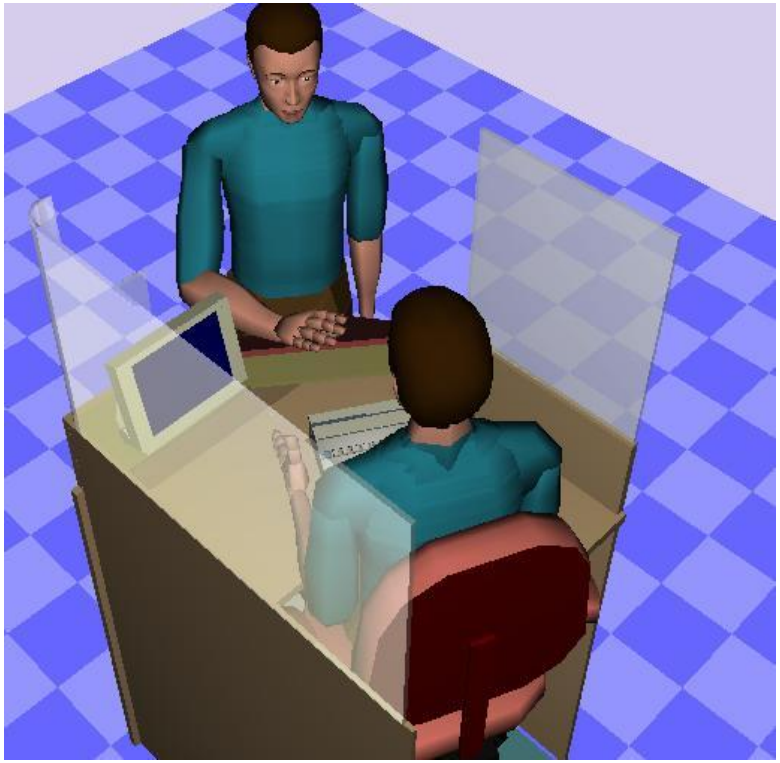
Design proposals:





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Mock up for user trials :

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Live test situation :

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Detailed 3D design for manufacture:

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Installed:

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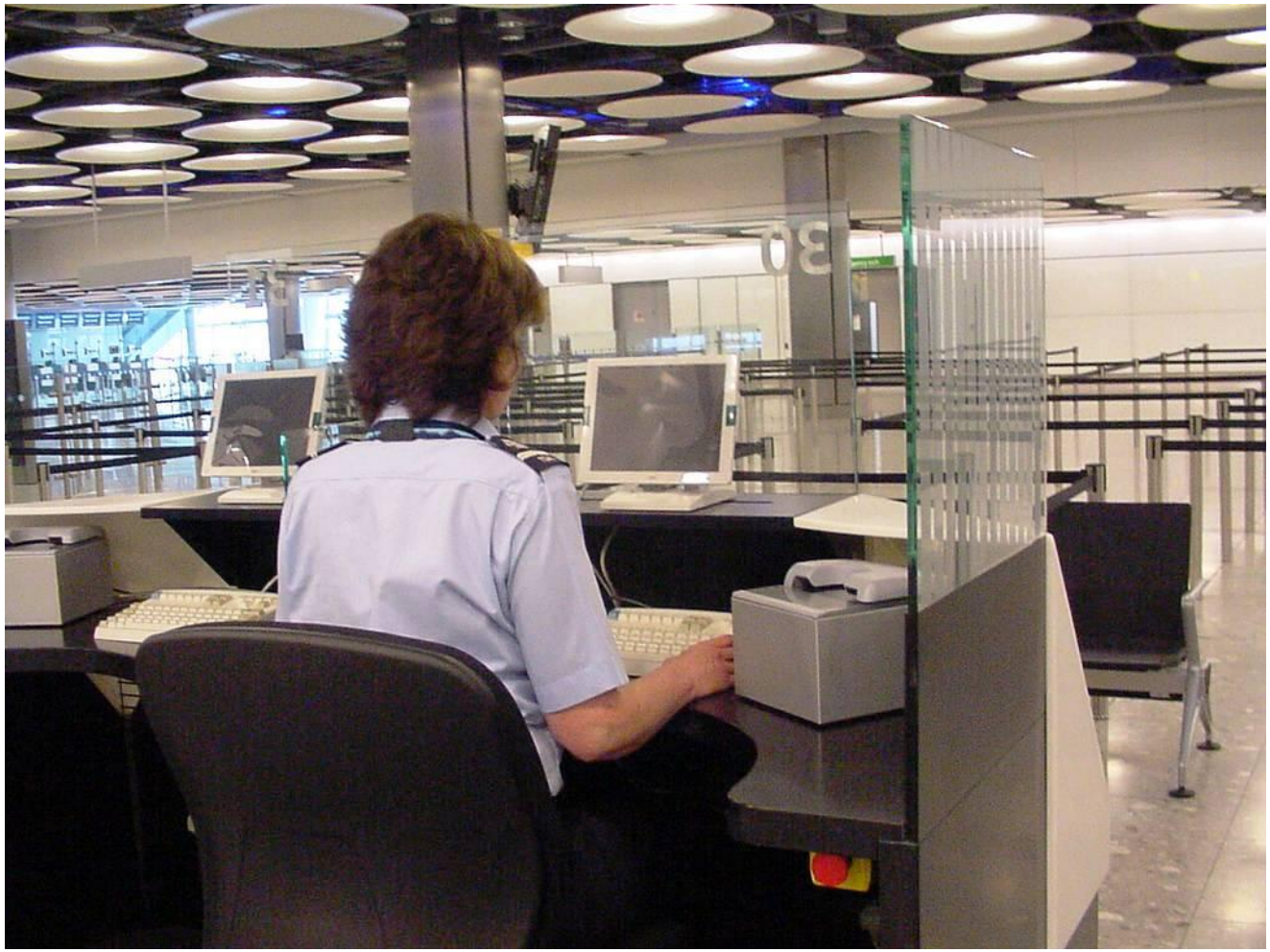
Installed T5:



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Installed Nottingham East Midlands :

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Ergonomic by practice:

Ergonomic by definition, standards, and design does not necessarily mean ergonomic by practice

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Assessing the Return on Investment for Workplace Ergonomic Interventions

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Summary

- Twenty nine case studies from a range of industries
- ROI from a few weeks to about 3 years
- Financial benefits through cost savings, increased productivity or quality of output
- Business case will help to promote the benefits of a proactive approach to managing MSDs

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Report and case studies

Available on HSE's website:
http://www.hse.gov.uk/research/rrpdf/rr491.pdf

or via www.hu-tech.co.uk

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Interventions – a variety of forms

- Design of the task
- Design of equipment, workstation
- Changes to working environment
- Re-organisation

Some interventions involved more than one of these elements

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Examples of costs and savings

…Before and after…

- *Sickness absence attributed to MSDs*
- *Productivity*
- Staff turnover
- Reduced materials waste
- Quality of output

Important to be able to compare the conditions before and after the intervention

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Patient transfers in theatre

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Patient transfers in theatre

- Excessive reach requirement: patients can be heavy and comatose
- Manual transfer of patients = significant back and neck disorders
- Canvasses purchased – total cost £8,545

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Patient transfers in theatre

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Patient transfers in theatre

Outcomes

- 64% < disorders over 4 years: 33% increase in theatre staff in same period
- Payback period 6 weeks

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Costs and benefits

Direct intervention costs	£8,545
Annual post-intervention cost savings (av)	£26,580
ROI	5 weeks

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Ultra fine suture manufacture

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Ultra fine suture manufacture

- Awkward/extreme neck posture
- No job rotation – highly skilled operation
- 40% of staff reported ULD discomfort

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Post intervention

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Ultra fine suture manufacture

Outcomes

- RA showed could work for 6 hrs not 4 hrs
- +ve feedback from staff
- Improved quality; productivity (33%); less waste
- Payback period 12 months

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Costs and benefits

Direct intervention costs	£9,350
Annual post-intervention cost savings (av)	£10,150
ROI	12 months

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Minimising MH risk for offshore equipment

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Minimising MH risk for offshore equipment

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Minimising MH risk for offshore equipment

- Low frequency; heavy weight; high risk
- Stoop lifting; constrained space
- 2 LTIs – 6 months & 10 days absence

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Post intervention

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Minimising MH risk for offshore equipment

Outcomes

- No MH LTIs since intervention (3 yrs)
- Payback period 3 months

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Costs and benefits

Direct intervention costs	£14,875
Annual post-intervention cost savings (av)	£44,844
ROI	3 months

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Conclusions

- Ergonomic interventions can take several forms: task, equipment, environment, organisation
- Need not be expensive
- CBA can be used to support business case for interventions to reduce MSD risks
- Good record keeping is key
- It is better to avoid retrofitting by good task design & organisation from the start

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Presentation recap

- What it means to fit the job to the person
- Real issues and solutions
- Demonstrated that the proper application produce cost-benefit

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Thank you

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