

Designing offices to improve business performance

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Count your chickens

- **Battery Hens**
 - high density in rows, no alternative space
 - poor daylight and ventilation
 - high yield per m², but poor quality eggs
 - low market value i.e. cheap eggs
 - sad unhealthy chickens
- **Free Range Hens**
 - no fixed space, freedom to choose
 - good daylight and ventilation
 - slightly lower yield per m², but high quality eggs
 - more expensive upmarket eggs, higher return
 - happy, healthy, inquisitive, playful chickens



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Count your chickens

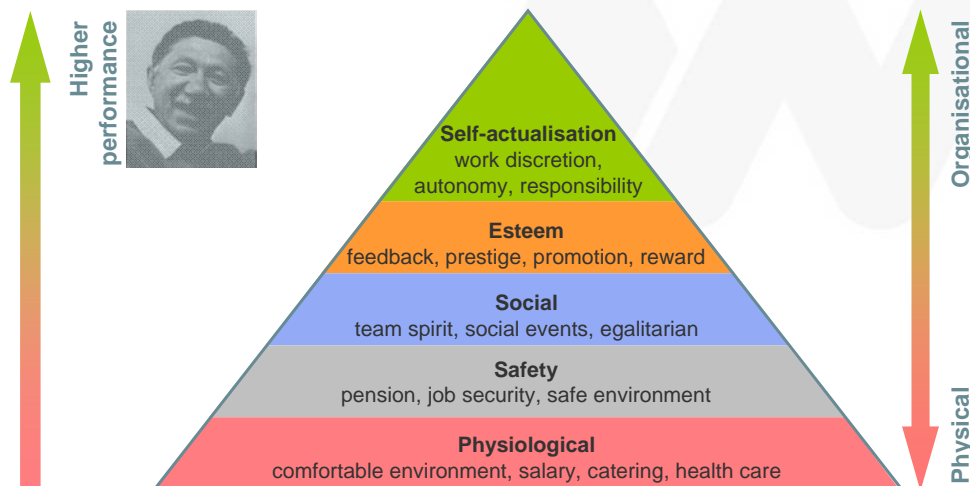
- Traditional open-plan office
 - high density in rows, no alternative space
 - poor daylight and ventilation
 - more output per m², but poor quality
 - low market value i.e. cheap
 - dissatisfied and de-motivated staff
- Alternative flexible office
 - no fixed space, freedom to choose
 - good daylight and ventilation
 - more output per m² and higher quality
 - more upmarket service, higher return
 - satisfied, productive and creative staff



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Occupant requirements – Base needs



Maslow (1943)



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Occupant requirements – Hygiene factors



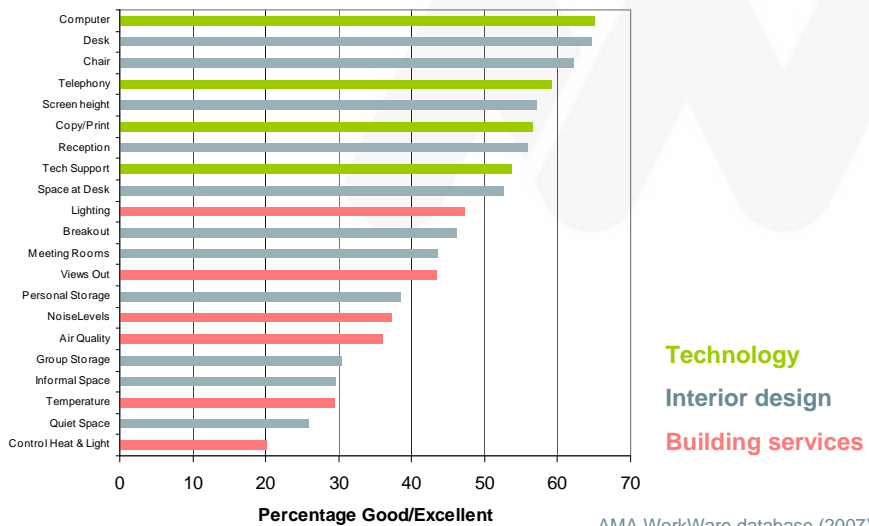
Herzberg (1966), Raisbeck (2004)



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Occupant requirements – Causes of dissatisfaction



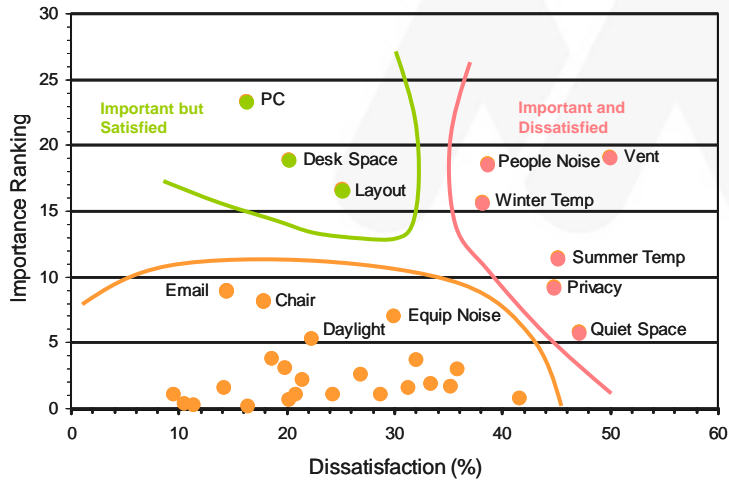
AMA WorkWare database (2007)



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Occupant requirements – Supporting work activity



Based on 68 buildings and 7200 responses, OPN Database



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Occupant requirements – A great place to work

- The ability to perform **distraction free work**
- Spaces that support **collaboration** and impromptu **interaction**
- Spaces that support un-distracted **team work** and **meetings**
- Accommodate personal workstyles through a **variety of workspaces**
- Appropriate **adjacencies** to support workflow and productivity
- Attention to individual **thermal comfort**
- Control of **glare** and direct visual access to **daylight**
- Space **allocated by function**
- Simple and clear **way-finding**
- Ease of accommodating changing **technology**
- Proactive attention to **ergonomics**
- Inclusion of **green plants**
- Expression of organisational **culture**

Kahler Slater (2007)



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Thermal comfort – Vernacular architecture



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Thermal comfort – Vernacular clothing



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Thermal comfort – Seasonal clothing



Winter



Summer



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Thermal comfort – Cool biz clothing

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Graduation Search of the top

これも 省エネ!

Suits aren't cool enough for Japan

FROM RICHARD LLOYD PARRY IN TOKYO
 Government orders to turn down the air conditioning to meet Kyoto targets have created a drastic rethink of menswear

YOU see them every summer morning, in the packed commuter trains and offices of Central Tokyo: men dressed in wool and polyester, sweating in the 90F heat. These are the salarymen, the warriors of the Japanese economy, for whom summer is a season more to be endured than enjoyed.

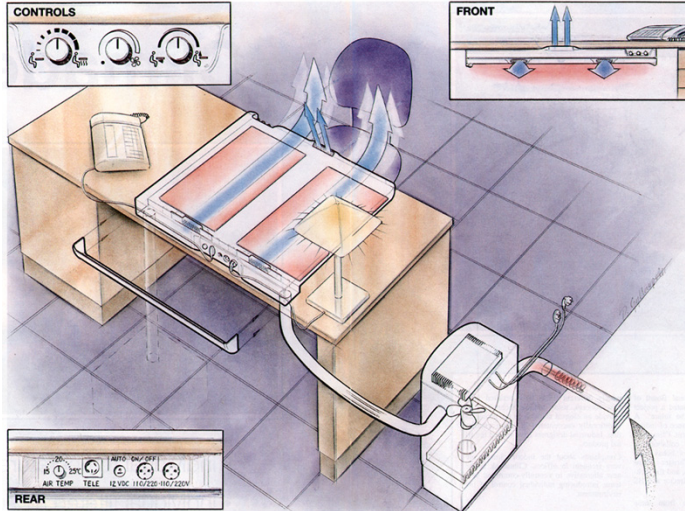
From June to September, a flog of humidity falls across Japan, tormenting office workers dressed in uniform more appropriate for winter. But a salaryman in a T-shirt would be like a samurai without his



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Thermal comfort – Individual control



Environmentally
Responsive
Workstation

West Bends
Mutual

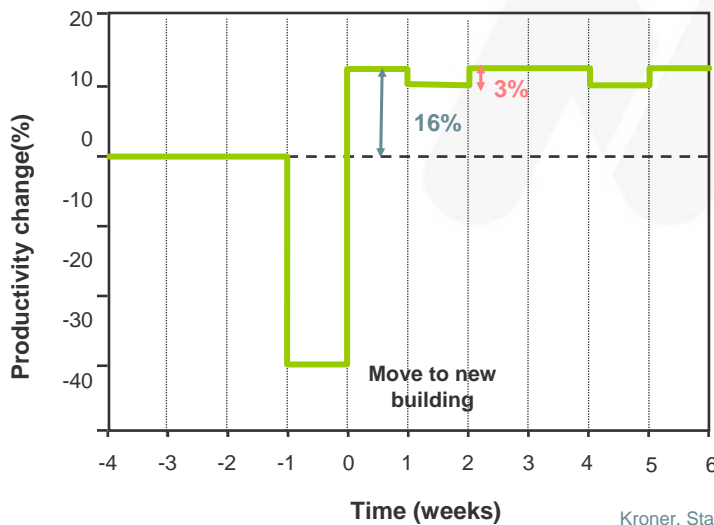
3% more
insurance claims
processed
energy savings



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Thermal comfort – Individual control



West Bends
Mutual

Insurance claims
processed



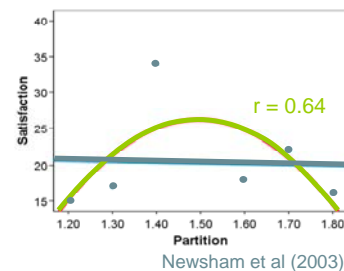
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Kroner, Stark-Martin & Willemain (1992)

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Noise & privacy – Screen heights

- CNRC research on desk screens:
 - noise interference less >1.6 m
 - noise exponentially worse <1.4 m
 - visual privacy best at 1.4 m
 - *“lower partition heights improve satisfaction... contrary to previous research and common sense ... reflect the desire for better daylight penetration ... and to the perception that lower partitions improve ventilation”*
- Anecdotal:
 - high screens cause more noise as neighbours have to shout over them
 - people louder behind higher screens as not seen



Newsham et al (2003)



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Noise & privacy – Design considerations

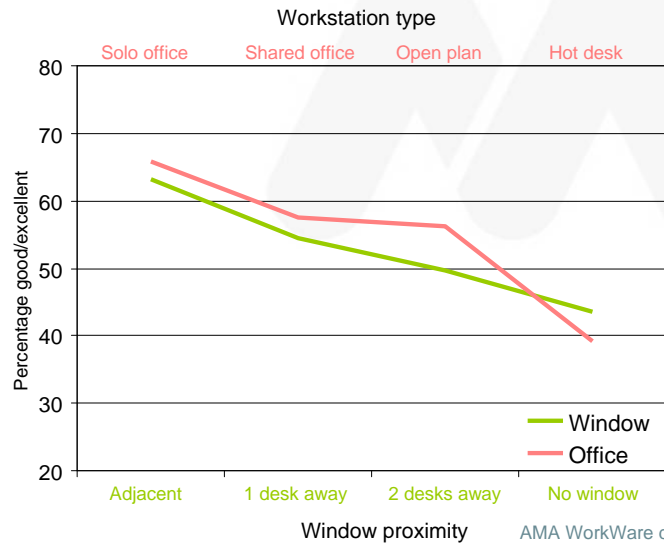
- Contain/displace:
 - co-locate team members with same tasks
 - co-locate noisy groups
 - provide “noisy” informal meeting areas, breakout, brainstorming areas
 - provide quiet areas (and home-working)
- Reduce/control:
 - Keep desk sizes reasonable
 - introduce office etiquette
 - control speaker phones and mobiles
 - consider option for headphones
 - careful with noise masking



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Variety – Daylight & views

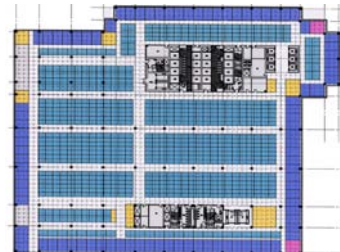


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Variety – Social networks & floorplates

- Roman legions:
 - Maniple = 2 centuries of 60-80 soldiers
 - 150 tactical unit in today's army
- Dunbar's number:
 - cognitive social group size of 150
 - based on social group and neocortex size of different primates
 - size of Christmas cards list, village/tribe
- Design implications:
 - create business villages/communities
 - physically and organisationally
 - design on a human scale!



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Variety – Multiple work-settings

AMA photosphere:

- Where do you have your best ideas?
- Where do you prefer to meet?
- Where do you prefer to concentrate and focus
- Where are you most productive?

Next generation (Steelcase, 2006):

- “formal meeting spaces are less important to millennials”
- “millennials are less distracted by noise”



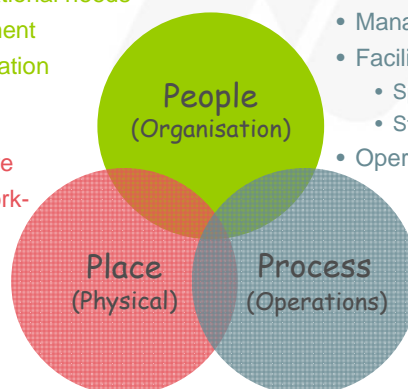
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Workplace design is not just about space

- Culture and workstyle
- Occupant requirements & motivation
- Business/organisational needs
- Change management
- Training and education

- Design and furniture
- Space plan and work-settings
- Technology infrastructure
- Building services



- Work process & measures
- Management & approvals
- Facilities management
 - Space allocation
 - Storage and archiving
- Operational procedures



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Different levels of requirement

Needs

Base Human:

shelter, food, comfort, safety

Personal:

social, interaction, privacy

Team:

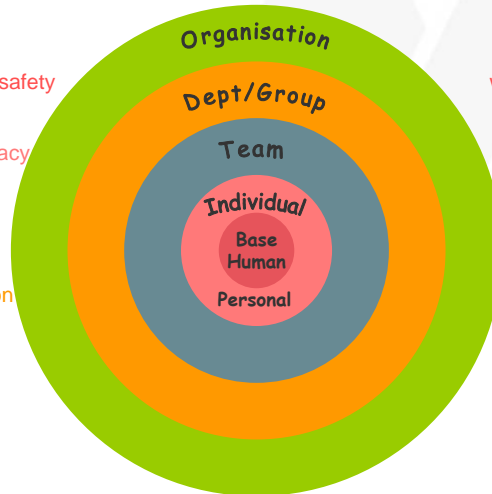
co-location, belonging

Group/Dept:

adjacency, collaboration

Organisation:

image, communication



Performance

Base Human:

work hours, absenteeism

Personal:

tasks, quality, quantity

Team:

deadlines, utilisation

Group/Dept:

P&L, fee ratio, win ratio

Organisation:

revenue, shares, attrition



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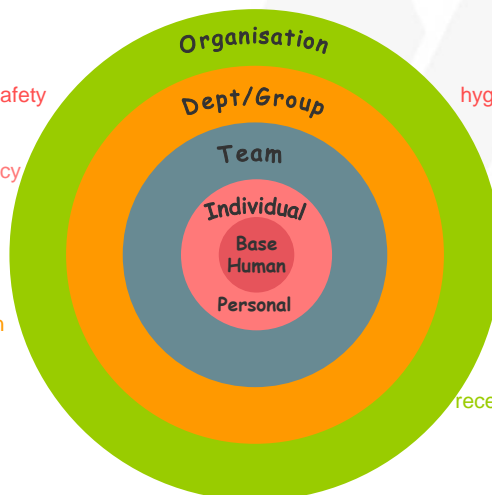
co-location, belonging

Group/Dept:

adjacency, collaboration

Organisation:

image, communication



Design

Base Human:

hygiene factors, ergonomics

Personal:

breakout, vend, choice

Team:

team-bay, open-plan

Group/Dept:

flexible, meet, common

Organisation:

reception, brand, conference



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Three pillars of design process

- Briefing:
 - understand need and set vision
 - establish success criteria
 - involve end-users (Kaya, 2004)
- Evidence based design:
 - research not anecdotes
 - study client organisation
- Post Occupancy Evaluation:
 - measure success
 - share lessons learned



Constructing Excellence



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Conclusion

- Understand human needs:
 - resolve hygiene factors
 - variety, choice, exploration
 - space for social interaction
 - nature, light, views, human scale
- Understand business needs:
 - vision, workstyle, objectives
 - success criteria
- Understand workplace processes:
 - briefing and change management
 - policies, infrastructure, operational



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Thank you



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