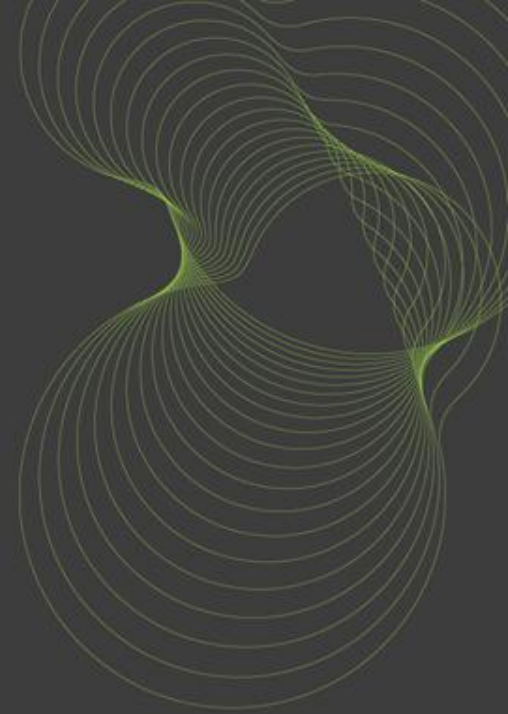


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## Smart Living Seminar

Peter Ball

Strategic Research Director

# Agenda

- Who is Peter Ball
- Who is BRE
- Smart Homes – challenges for the future
- Smart Homes – past, present and future
- Future scenarios
- Blue sky thinking
- Questions

# Who is Peter Ball?

- Chartered Builder
- 20-years plus IT experience
- 15-years as an Innovator
- Developed solutions using mobile and smart card technologies
- Two International Innovation Awards
- Interested in new and emerging technologies
- Head up the Strategic Research initiative for BRE

# Who is BRE?

- Building Research Establishment
- Established in 1919
- Originally a Government funded organisation
- Recognised internationally as the leading R&D organisation for the Built Environment
- Privatised in 1997
- Charitable organisation – all profits go into funding R&D into the Built Environment
- Based in Garston, Watford
- Home of the BRE Innovation Park – demonstration of leading edge technology for the Built Environment

# Issues and Challenges

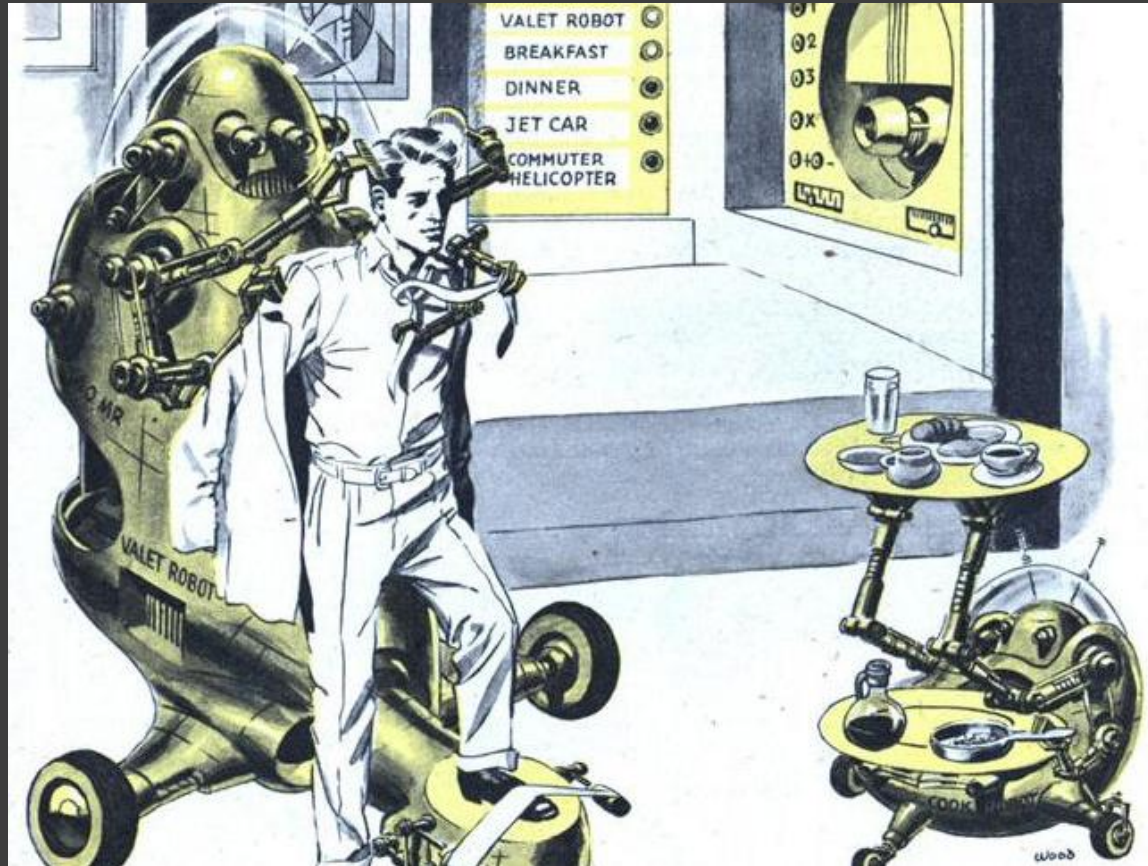
- Key issue is building stock
  - 80% of the homes we need for the future exist
  - Short of 3-million homes
- Nearly 50% of CO<sub>2</sub> emissions come from buildings
  - Major Government target to reduce this by 2050
  - Missed all targets over the last 10-years
- Dramatic rise in single occupancy homes
  - Single aged, 20s and 30s
- Increasing aged population

## The Past (Future perspective from 1950s)

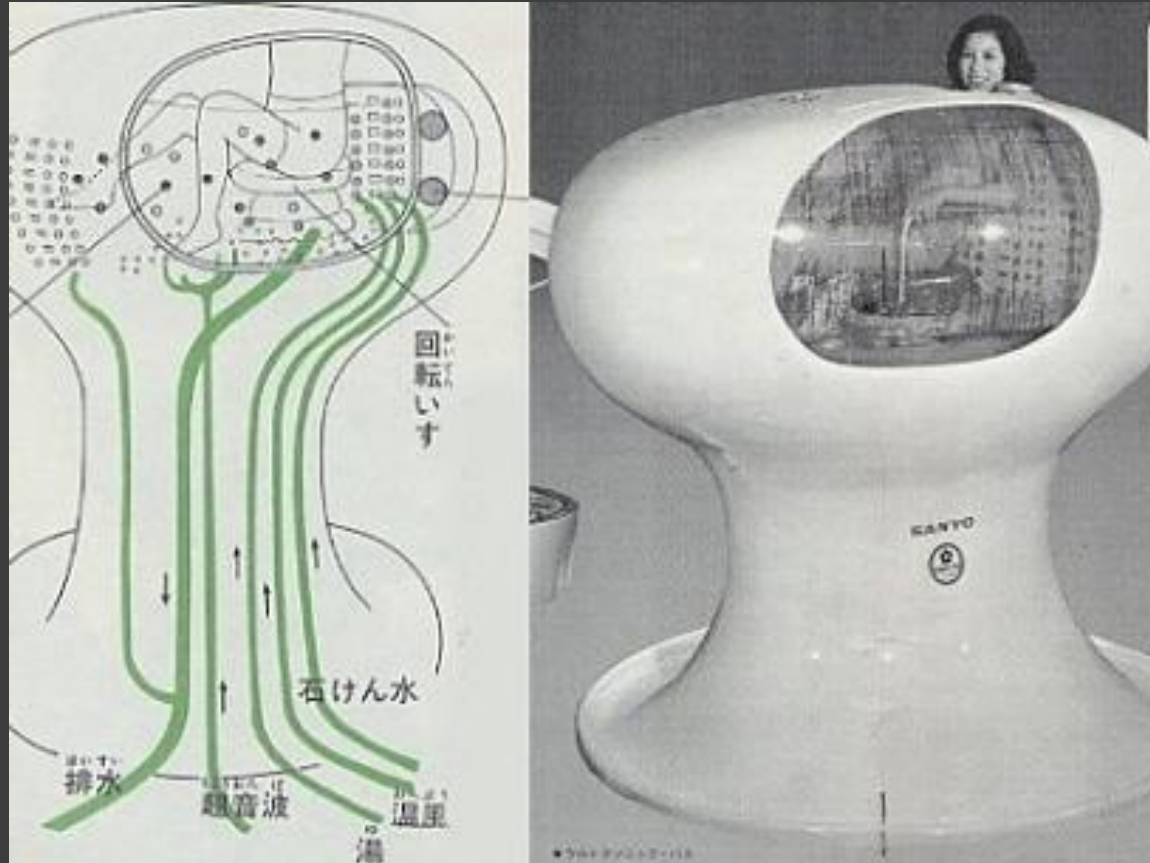
- Interesting to look at the vision of future homes from the past.



Vision from the 50s



**All about convenience / lifestyle**



I give you the Ultra-sonic bath



Because everything in her house is waterproof,  
she can do her daily cleaning with a hose!

# The Present

- Interesting to look at the vision of future homes from the present.









# The Future



- The Future that addresses the Key Challenges
  - Building stock
  - CO<sub>2</sub> and the sustainability agenda
  - Single living (aged, 20s & 30s, 65+)
- Not convinced that our future requirements require specialist technologies / applications
- Developed for mainstream living
  - Mass market appeal
  - Lifestyle products
  - Cheaper

## Two personas

### Martin

- 72 year old male
- Retired
- Relatively fit
- Early signs of dementure and arthritis
- Nearest family live 40-miles away
- Passion for opera

### Craig

- 31 year old male
- International Business Development Manager
- Very fit; training for the London Marathon
- Suffers from eczema
- Nearest family 15-miles away
- Passion for Heavy Rock

# Homes have integrated “smart” technology



## Martin

- Uses a smart phone as his alarm
- Bed is fitted with a detector – linked to a home monitoring well-being package
- Motion detectors around the home
- Room lighting and OLED wallpaper can be set to influence mood

## Craig

- Uses a smart phone as his alarm
- Bed is fitted with a detector – linked to a home monitoring fitness package
- Motion detectors around the home – linked to the security system
- Room lighting and OLED wallpaper can be set to influence mood

# Homes have integrated “smart” technology



## Martin

- Cold water riser is fitted with a sensor and linked to the well-being system
- The sensors monitor temperature to ensure the indoor “climate” is acceptable
- The kitchen is fitted with smart devices to monitor diet and nutritional content

## Craig

- Cold water riser is fitted with a sensor and linked to a water monitoring meter
- Sensors monitor temperature to ensure the minimum use of energy
- The kitchen is fitted with smart devices to monitor diet and nutritional content

# Homes have integrated “smart” technology



## Martin

- TV is a touchscreen monitor & is networked at 100mBit/s
- Multi-way video conferencing
- Regular dialogue with GP facility and family
- Optional medical data is collected by the “home” and updates medical record

## Craig

- TV is a touchscreen monitor & is networked at 100mBit/s
- Multi-way video conferencing
- Regular dialogue with overseas clients and HQ
- Optional medical data is collected by the “home” and updates fitness package offering advice



## Homes have integrated “smart” technology

- Health and well-being
- Resource management
- Entertainment
- Access control
- Security
- Accessibility
- Quality of life
- Has to be mainstream to make it affordable

# Blue sky thinking

- Wearable technologies
  - Interact with the home and adjust personal climate to suit individual comfort levels
- Energy saving
  - TVs, PC monitors, laptops
  - Replaced with “contact lenses” that are stimulated with lasers to create 3D images of information (e-mails?), video, TV feeds



# Blue sky thinking

- Digital architecture
  - Individual, personal views of the interior and exterior of buildings
- Digital skin
  - Skin-based electronics can link blood chemistry and nerve signals to external computers and systems



# Summary

- Who is Peter Ball
- Who is BRE
- Smart Homes – challenges for the future
- Smart Homes – past, present and future
- Future scenarios
- Blue sky thinking

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# Questions

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