



Drum Housing



Good homes for good lives...

ENERGY EFFICIENT COMMUNITIES

GOOD HOMES ALLIANCE - 12th June 2008

Paul Ciniglio MA, B.Sc(Hons), Dip BS, MIEEnvSC
Sustainability and Innovation Manager – Radian group



About Drum:



- **Part of the Radian Group since Dec 06** (Oriel, Windsor & Drum equal size partners)
- **Own and manage 15,500 homes in SE**
- **Build approx 800-1,000 new homes pa**
- **Construction spend approx £50m pa** (new build, maintenance and repairs)
- **Collectively large consumer** (of natural resources and creation of waste)
- **Strong reputation** (for CSR, sustainability, innovation, design and MMC – GOLD award 2007)





Seeing Radian's impact in context

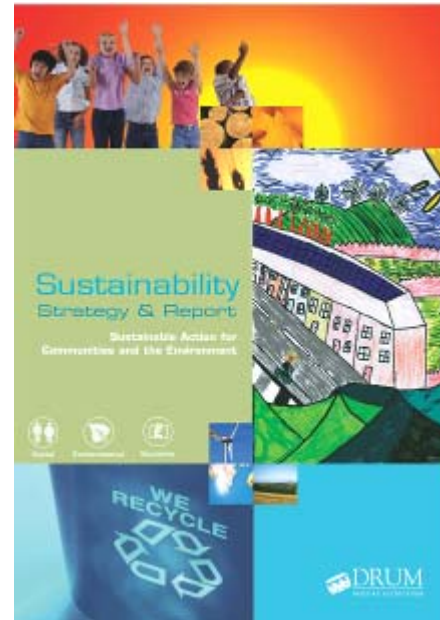
- Circa 50,000 tonnes is total group carbon footprint of housing stock per annum
- 7,000,000 litres of potable water used per day
- 250,000 tonnes of household waste produced each year
- >£1m invested in projects using renewable energy, saving over 225 tonnes of CO₂ pa
- Staff travel to work 200 tonnes CO₂ pa



Solution Sustainability Strategy



- 2nd Sustainability strategy and report produced
- Progress report 2004-06
- Emphasis on action
- 12 theme framework
- Partnership approach
- Board / resident involvement & consultation
- Challenging & exciting 5 year strategy
- Waste management sub strategy
- Senior management / Board member 'buy in' to embrace agenda





What is a sustainable community?

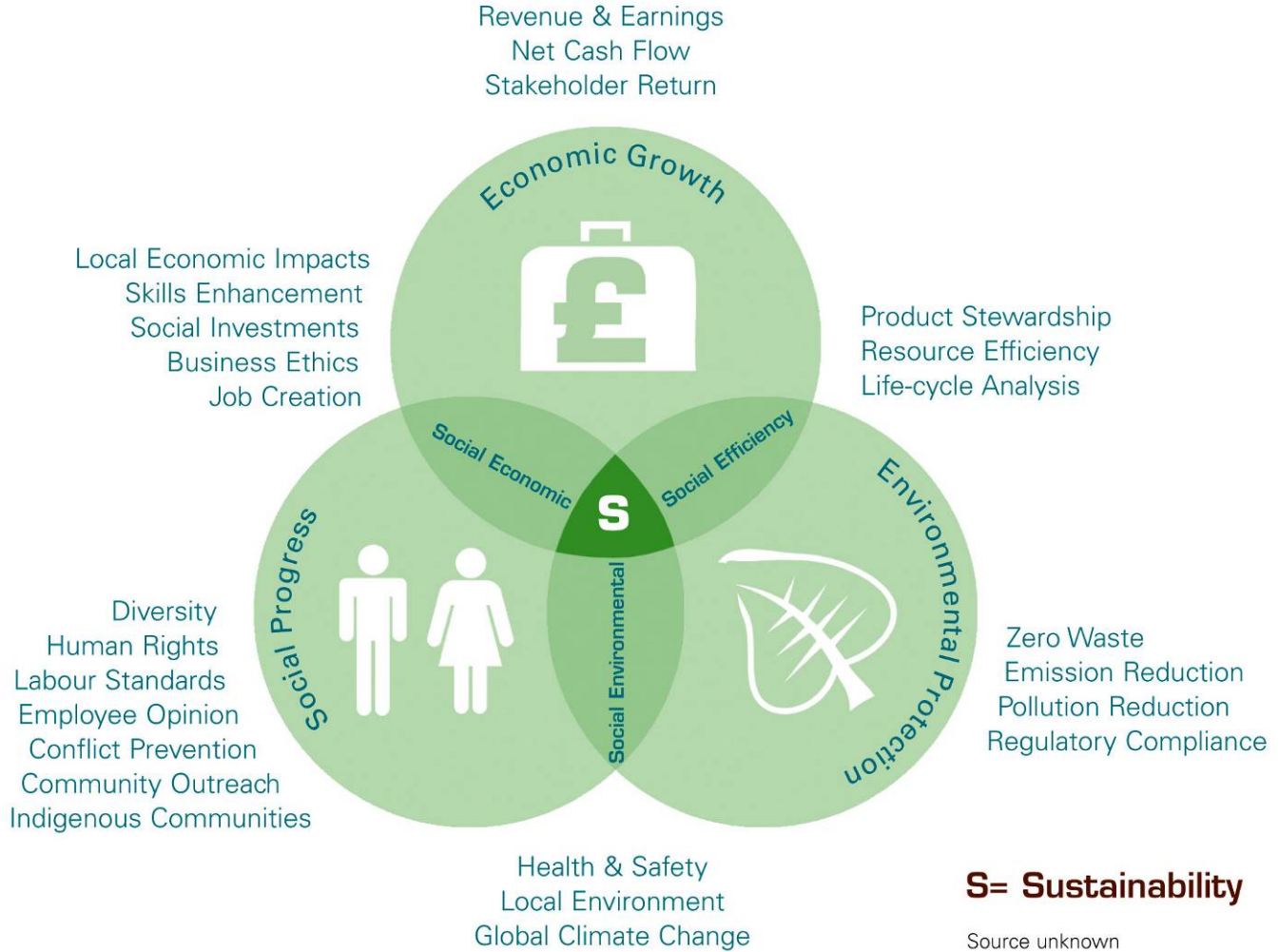
... A place where people wish to live both now and in the future

- Current & future demand
- Reputation
- Crime & anti-social behaviour
- Quality of built & green environment
- Accessibility of facilities & work
- Community cohesion
- Social exclusion
- Housing quality & design
- Community mix





Triple Bottom Line Approach to Sustainability

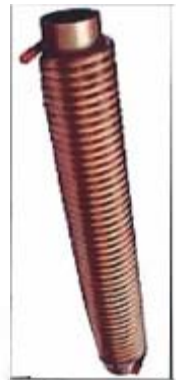
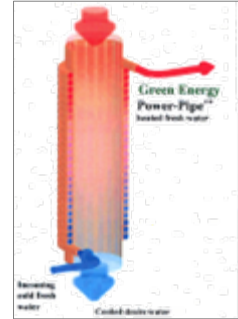
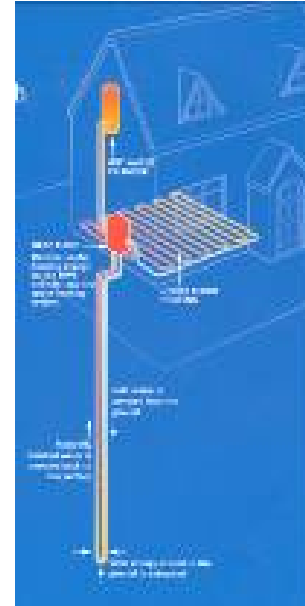




Kingsley Existing homes



- “Closing the loop” Project
 - First large scale domestic GSHP’s in Hampshire to 19 homes, formerly solid fuel and electric heating
- “Generation Homes” Project
 - Partnership with EST & ESD to demonstrate significant household CO2 emission reductions on 6 units (min 60% target, 75% achieved!)
 - Residents running costs expected to be halved! Sophisticated monitoring in place

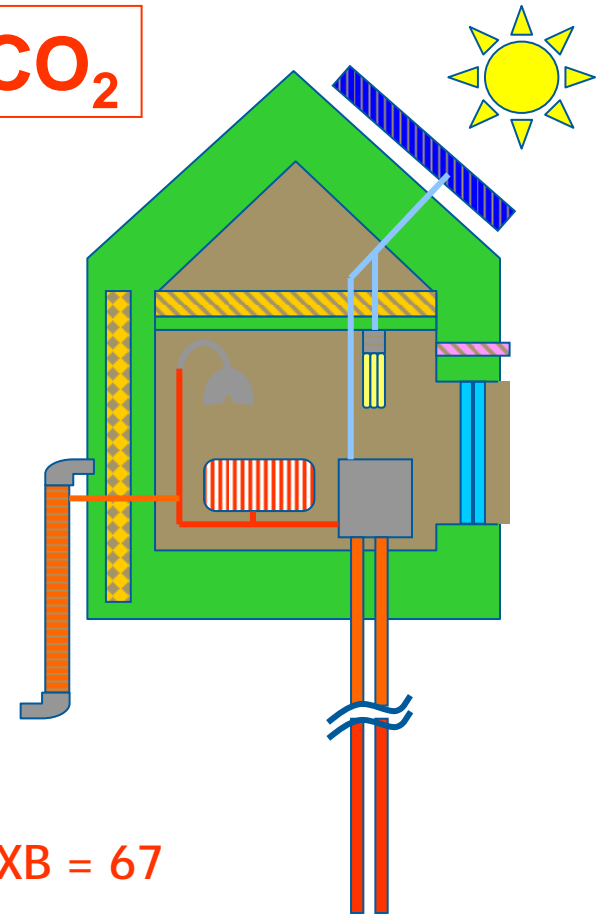


'Generation Homes', Woodfield, Kingsley – Dec 06/Jan 07



-75% CO₂

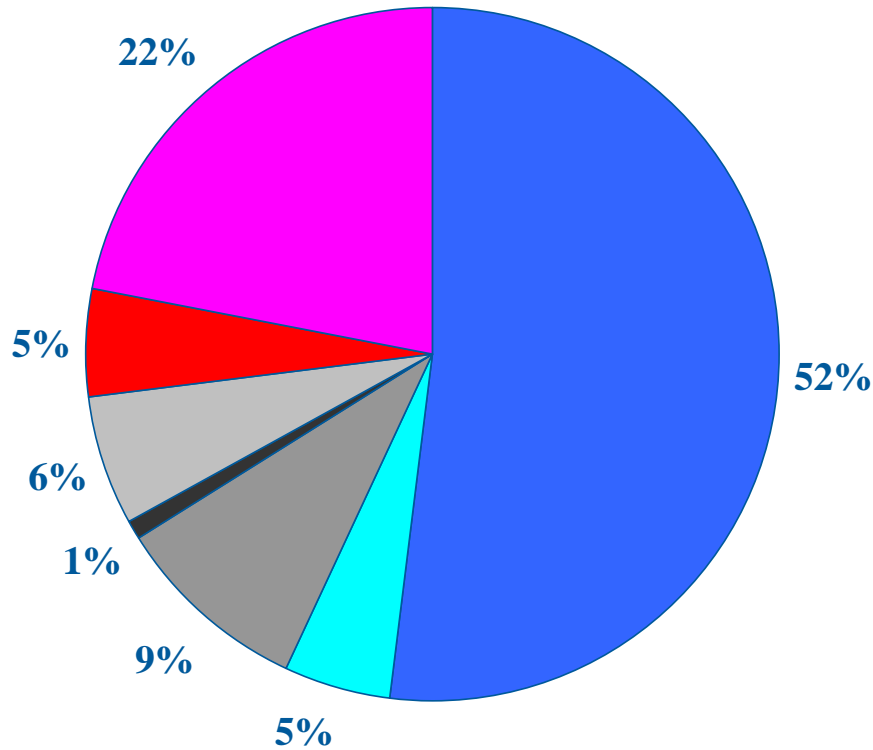
- Energy efficiency:
 - Cavity wall insulation
 - Loft insulation 300mm
 - Double glazed windows
 - Low-energy light bulbs
 - Draught proofing & ventilation
 - Waste water heat recovery
- Renewables:
 - Ground source heat pumps
 - Solar Photovoltaics



EcoHomes XB = 67

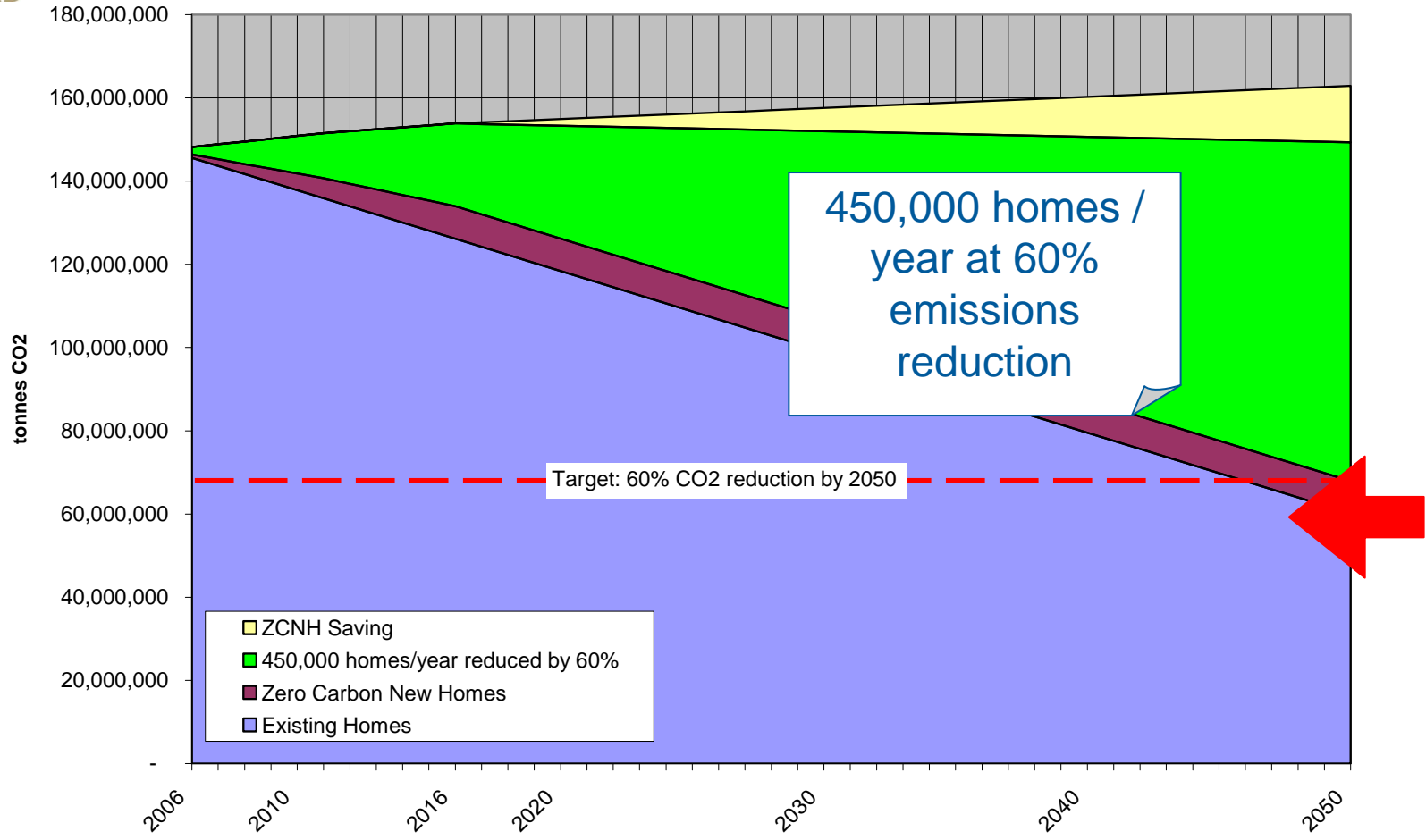


UK Energy Consumption





Needed to Hit 60% reduction by 2050





Outcomes

New / existing homes

- Hampshire Solar Streets Project
 - 43 panels in prominent locations delivered in partnership
- PV serving sheltered housing communal electricity
 - Second largest domestic installation in Hants
 - Monitoring reveals higher than expected performance – annual yield reached within 7 months (4,300 kWh produced in year 1)





Chapel House – Southampton

Photovoltaics / Building for life Gold standard

- **75kWp** (approx 600m² of panels)
- **Powers communal electricity** of approx 2kW base load surplus 73 kW exported to grid
- **Believed to be largest system installation on a single building in UK**
- **100% grant funding** from DTI&SEEDA
- **Visited by Gordon Brown June 2007**





GOLD AWARD

REEMA regeneration site

- **Structurally Insulated Panel system (SIPS) – 140mm thick**
- **Off site manufacture for quality and speed of assembly**
- **Highly insulated and air tight construction**
- **Whole House Ventilation with Heat Recovery**
- **FSC timber windows (U-value 1.35)**
- **Low energy lighting throughout**





Reema Regeneration Renewables

- Renewables to 10% units in 150unit development in Petersfield
- 8 x Solar HW
- 22kWp Solar PV,
- LCBP & Local partnership funding
- £170,000 investment





'Way of the Sun', Whitehill – July 2006



Combination of solar thermal & solar electric renewable energy





GOLD AWARD

Greenoak HA – Passive Housing



GOLD AWARD 2007
THE HOUSING CORPORATION'S
AWARD FOR EXCELLENCE



HOUSING CORPORATION



GOLD AWARD

Greenoak's passive approach

Reduce energy use, pollution & fuel bills.

- High levels of insulation
- Triple glazing
- Airtight construction
- Avoid cold bridges through insulation
- Draught lobby
- No cold roofspace
- Plenty of daylight
- Low energy lighting

Adaptable

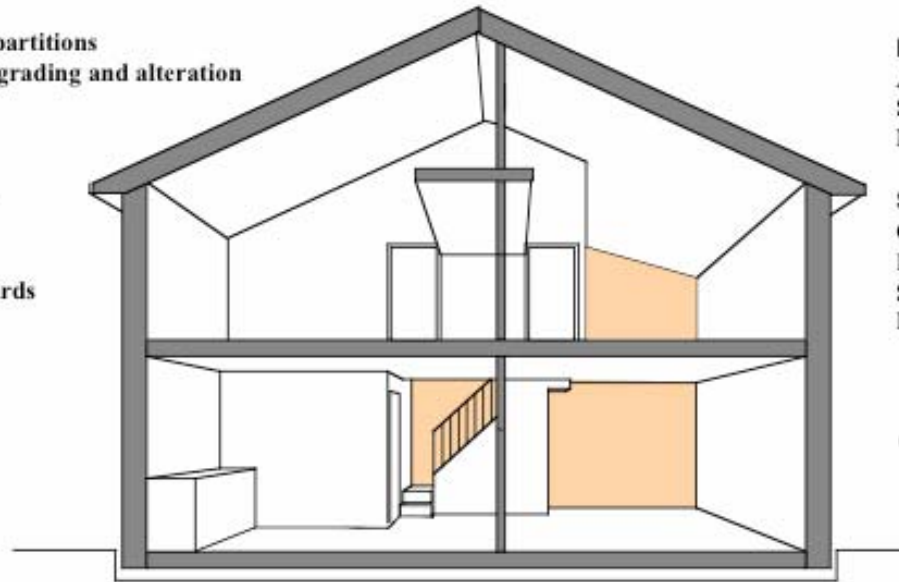
- No load bearing interior partitions
- Services accessible for upgrading and alteration

Accessible

- Wheel chair accessible
- Lifetime Homes standard

Secure

- Secured by Design standards



Reduce water bills

- Low water use toilet
- Shower with efficient spray head
- Spray taps
- Water butt in garden

Reduce waste

- Recycling bins provided
- Prefabricated structure
- Contractor to recycle waste on site

Reduce maintenance

- Aluminium exterior to timber windows
- Self-coloured render
- No painting as natural finish to timber

Sustainable specification

- Ozone friendly
- PVC free
- Sustainable timber
- Low environmental impact materials

0.9 tonnes CO₂/yr



Other considerations:

- On site or off site renewables?
- ESCO's
- Innovative financing programmes
- Swaffom wind turbine, Norfolk
- Engagement with the community members!
- Reliability of technology
- Equality and the wider community
- Review outcome and success





GOLD AWARD

Plans and future projects

- Consistent approach within Radian – new Sustainability & AW strategies summer 2008
- Code for Sustainable Homes matrix
- Renewables procurement framework
- Resources targeted at affordable warmth / carbon savings (use of EcoHomes XB)
- Exemplar CFSH level 5/6 in each Radian region
- Gold hybrid house – Passive Plus with Greenoak
- Performance in use flyer
- End user experience
- More focus on water conservation & waste reduction
- EU funded projects IEE and CONCERTO - PH
- Partnership approach





Thank you!



*'Society is indeed a contract. It is a partnership in all science;
a partnership in all art; a partnership in every virtue, and in all perfection.
As the ends of such a partnership cannot be obtained in many generations,
it becomes a partnership not only between those who are living,
but between those who are living, those who are dead,
and those who are to be born'
- Edmond Burke (1729-97)*