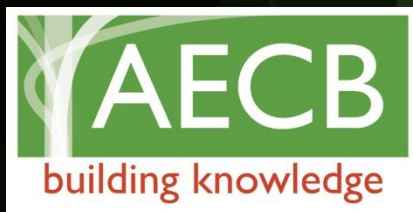




AECB Annual Conference 2017

Andrew Simmonds

CEO



- the association for environment conscious building

News

Exciting new Patron membership

AECB Expert Advisors Group

Welcoming 50 new members from the Republic of Ireland

New office & new team members

CarbonLite retrofit online training courses

Passivhaus Designer, Passivhaus Bitesize, THERM online courses

Low Energy Buildings Database > Better Buildings Platform

AECB Building Standard (Silver) & Passivhaus

AECB certified 330, uncertified 05

AECB Non-domestic certified 02, uncertified 01

More AECB in pipeline

Hastoe HA have committed to building to the AECB Standard

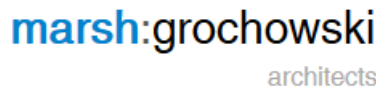
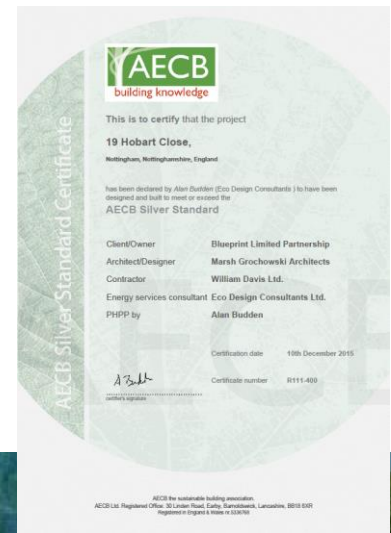
PH units 750, of which LA built 200 across 20 sites

At least 750 more PH units underway

30-50 LAs attempting or exploring c. 1,000 units

case study

- 63 Units to AECB Silver in Nottingham
- Largest scheme to AECB silver standard



Climate Change - is the background to our work
Building knowledge and better buildings - the goals

CLIMATE CHANGE – IT'S GETTING SCARY – HOW ARE WE DOING?

Are we finally turning the corner on our fossil fuel dependency?

How much fuel is the world burning each year?

How Do We Get Out of This Mess?

George Monbiot

A new 'Restoration Story'

“You cannot take away someone’s story without giving them a new one. It is not enough to challenge an old narrative, however outdated and discredited it may be. Change happens only when you replace it with another. **When we develop the right story,** and learn how to tell it, it will infect the minds of people across the political spectrum.”

But

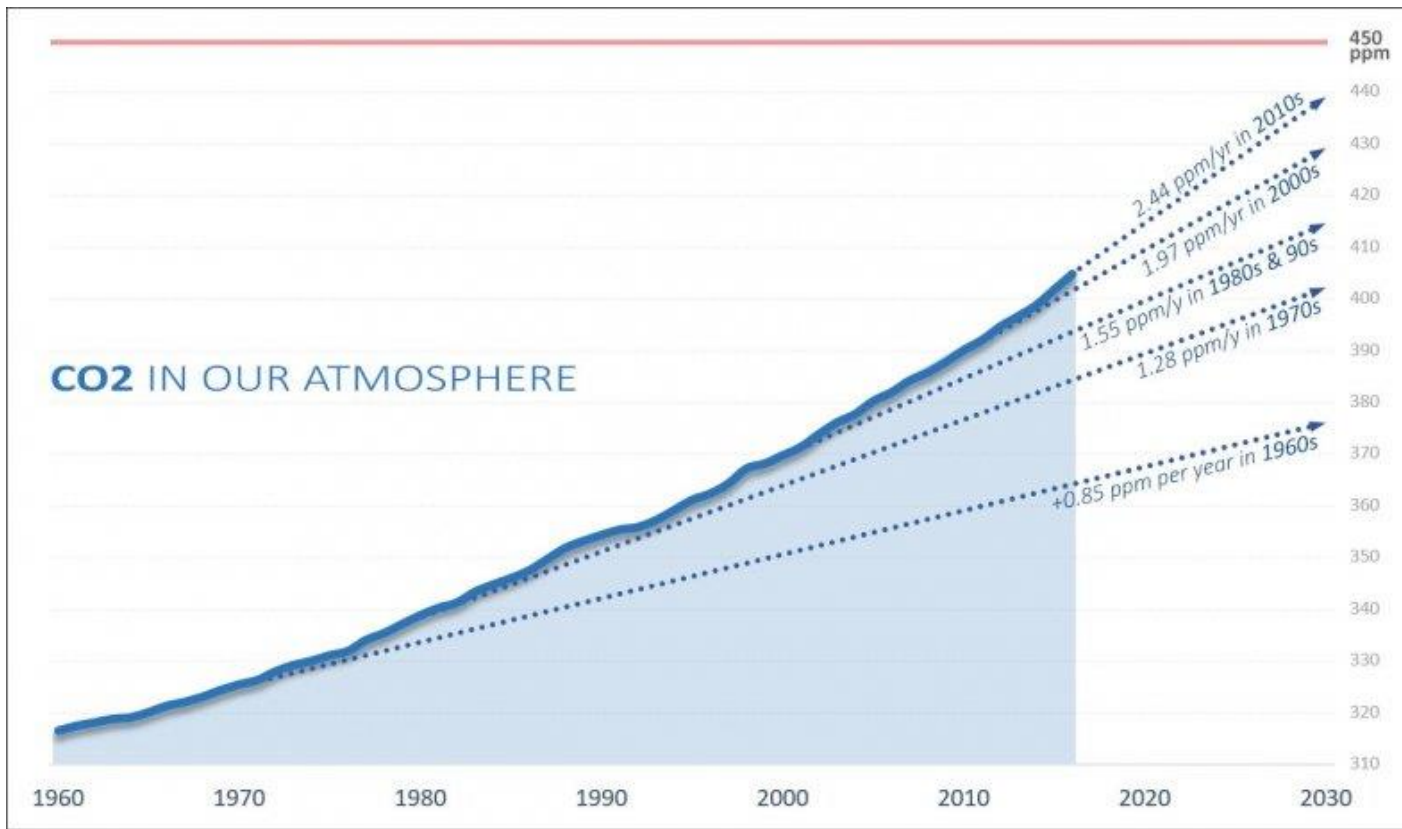
“And, because there is nothing to be gained from spreading falsehoods, it must be **firmly grounded in reality.**”

<http://www.monbiot.com/2017/09/11/how-do-we-get-out-of-this-mess/>

Barry Saxifrage
Visual Carbon

<http://www.saxifrages.org/eco/>

Data from BP Statistical Review
of World Energy



TOTAL CO2 IN OUR ATMOSPHERE -- Data from NOAA ESRL showing part-per-million (ppm) increases per year at www.esrl.noaa.gov/gmd/ccgg/trends/. Decade trends lines show the average annual CO2 increase for that decade, continued out to 2030. Chart by Barry Saxifrage at NationalObserver.com and VisualCarbon.org, March 2017.

<http://www.nationalobserver.com/2017/07/13/analysis/these-missing-charts-may-change-way-you-think-about-fossil-fuel-addiction>

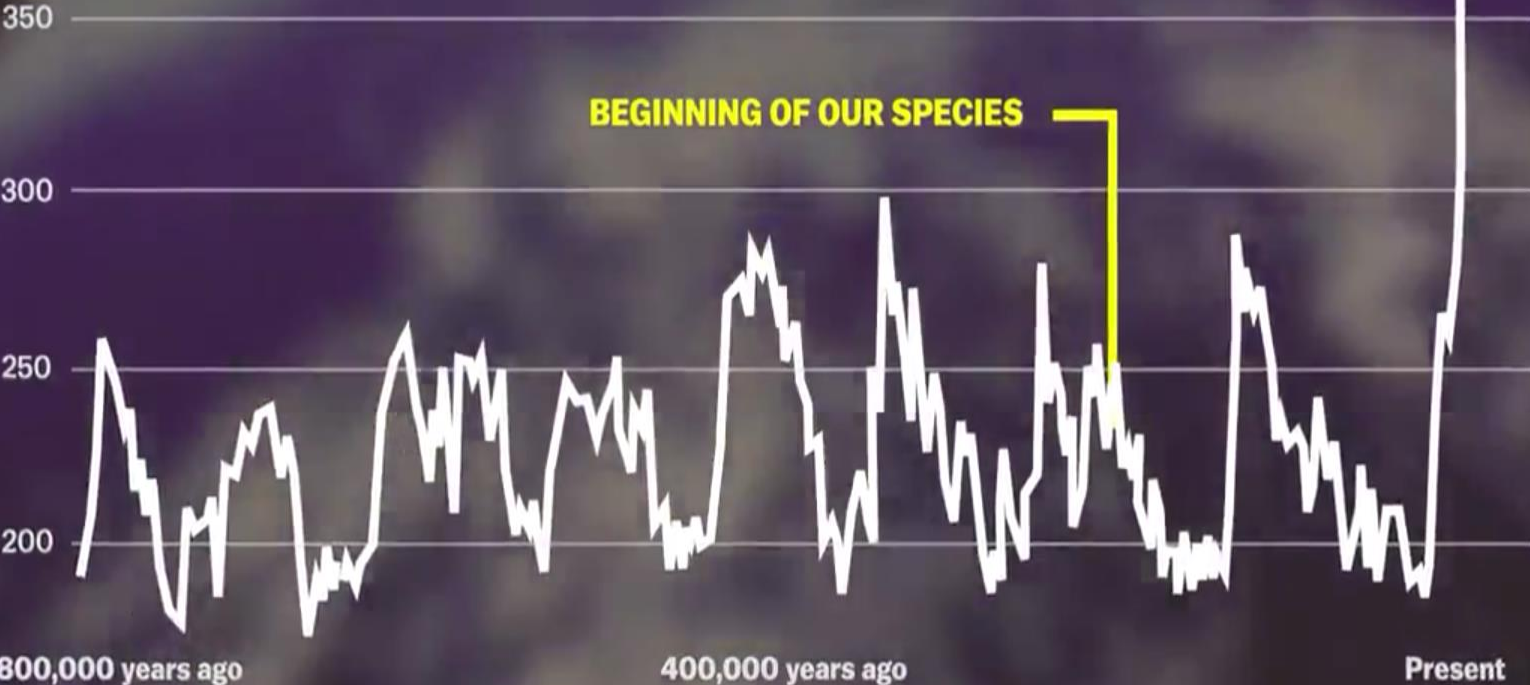
MEASURED: “atmospheric CO2 data doesn’t rely on unverifiable, self-interested, reports from industries and nations.”

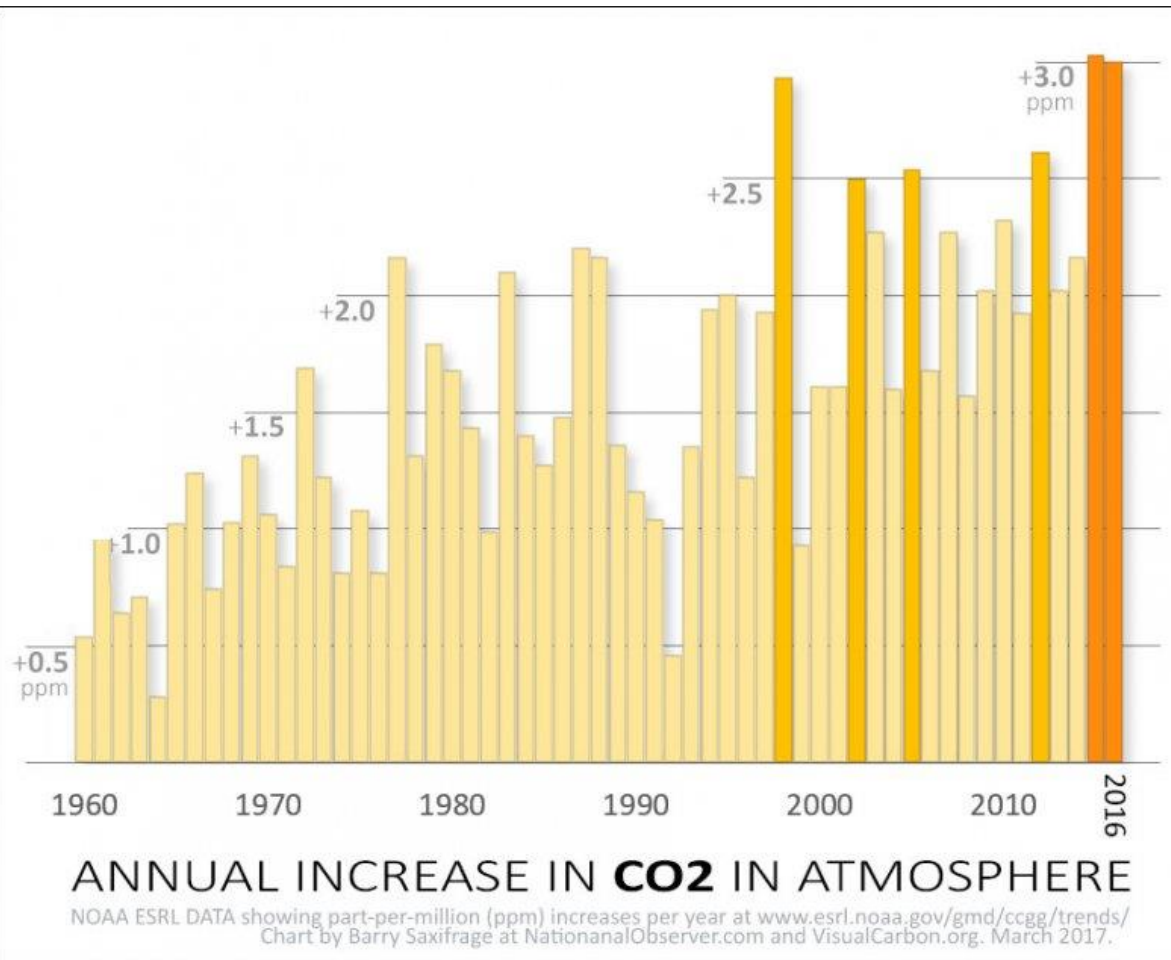
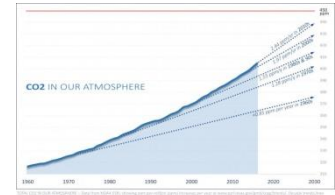
WARNING: UNDER-REPORTING, ‘MISSING’ STATISTICS IN "BP Statistical Review of World Energy."

We're in truly uncharted territory

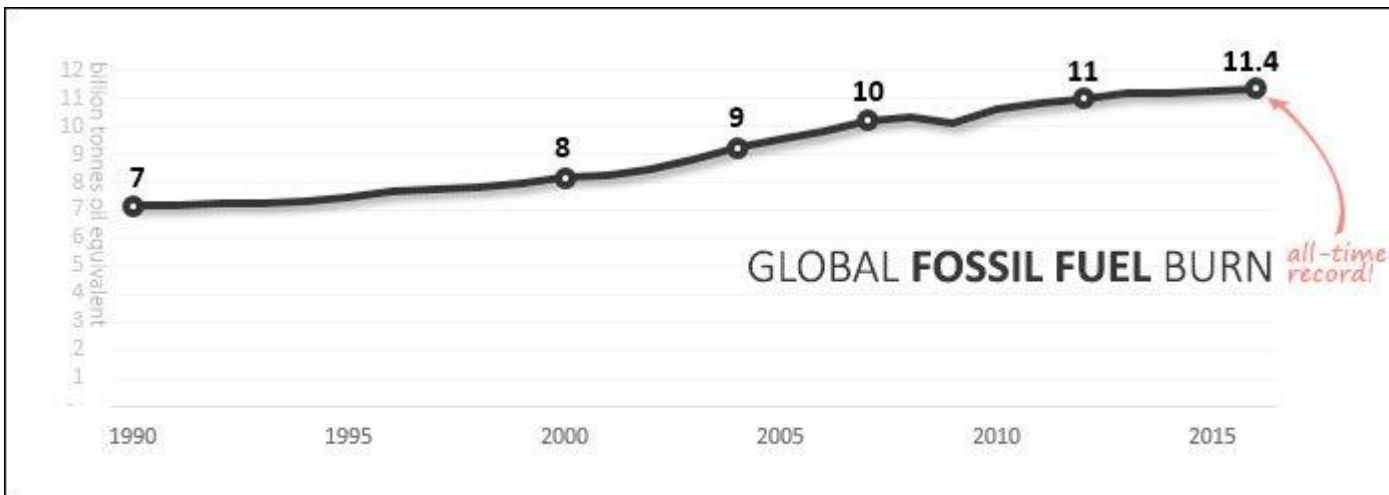
HISTORICAL CO2 CONCENTRATION (PPM) - SCRIPPS/UCSD

WE ARE HERE 

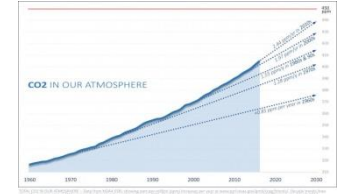




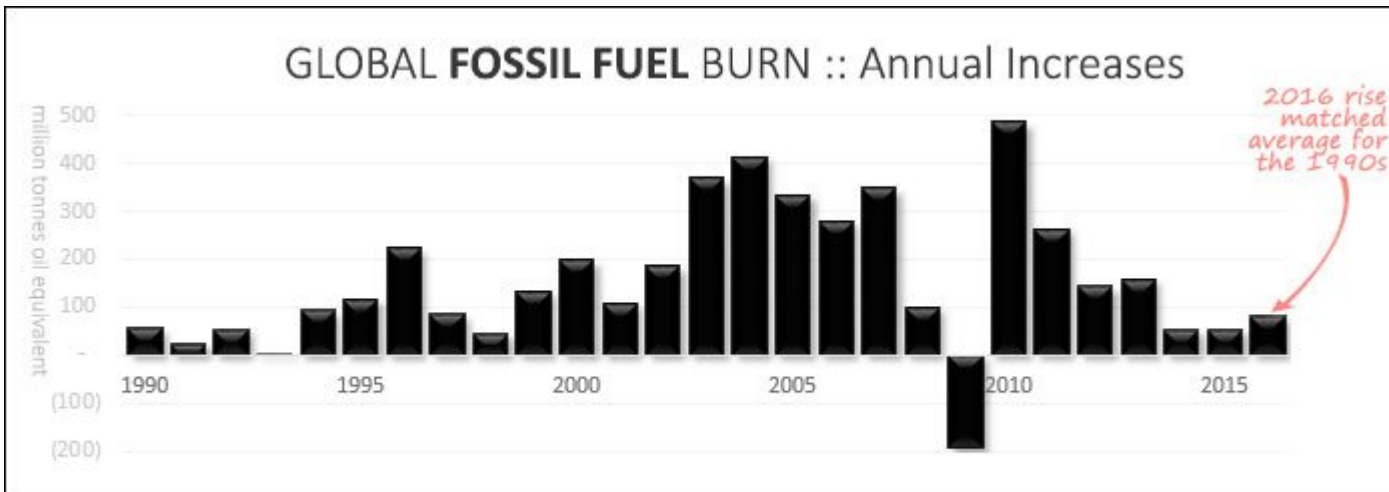
“..there is no sign of a turning point in our atmosphere, but CO₂ levels are actually *accelerating* upwards. “



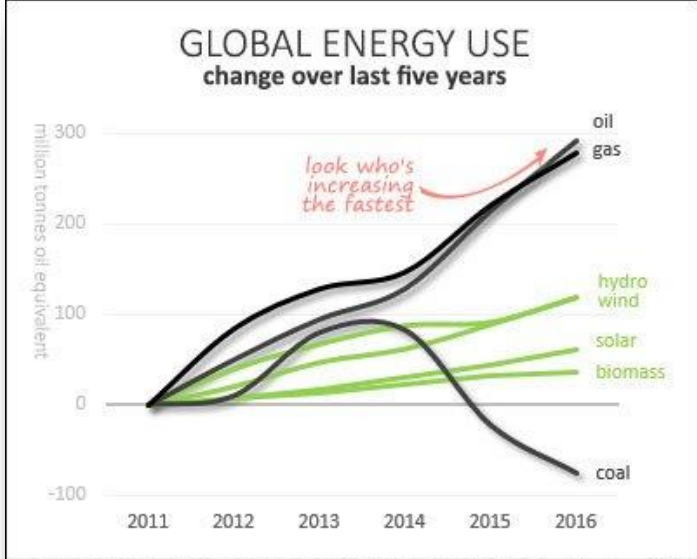
GLOBAL FOSSIL FUEL CONSUMPTION, 1990 - 2016. Billions of tonnes of oil equivalent. SOURCE: Sum of Oil, Gas and Coal consumption listed in BP Statistical Review of World Energy June 2017. CHART by Barry Saxifrage at VisualCarbon.org. June 2017.



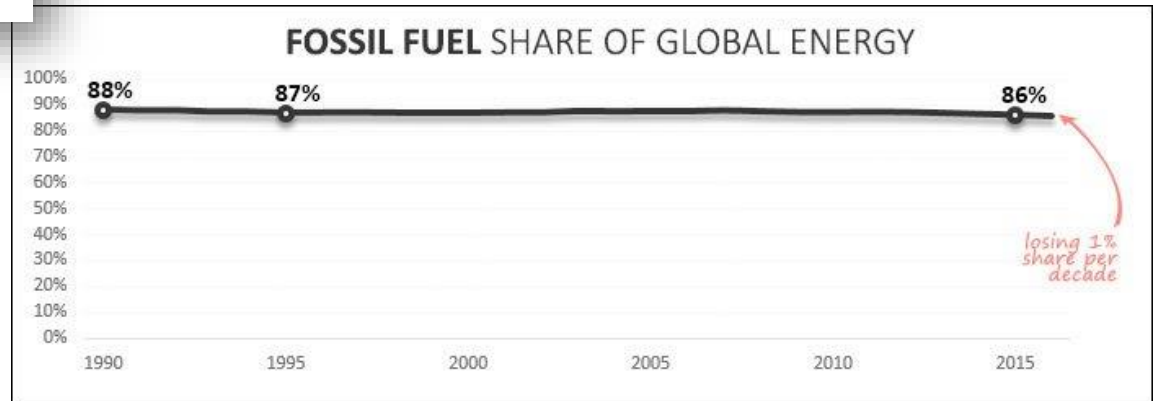
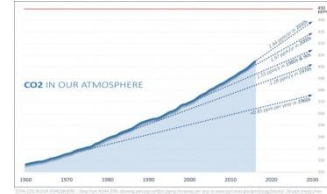
The 1990s were business-as-usual.



GLOBAL FOSSIL FUEL CONSUMPTION, 1990 - 2016. Annual change in energy consumption. SOURCE: Sum of Oil, Gas and Coal consumption vs total energy in BP Statistical Review of World Energy June 2017. CHART by Barry Saxifrage at VisualCarbon.org. June 2017



GLOBAL ENERGY CONSUMPTION, 2011- 2016. SOURCE: BP Statistical Review of World Energy June 2017. CHART by Barry Saxifrage at VisualCarbon.org, June 2017.

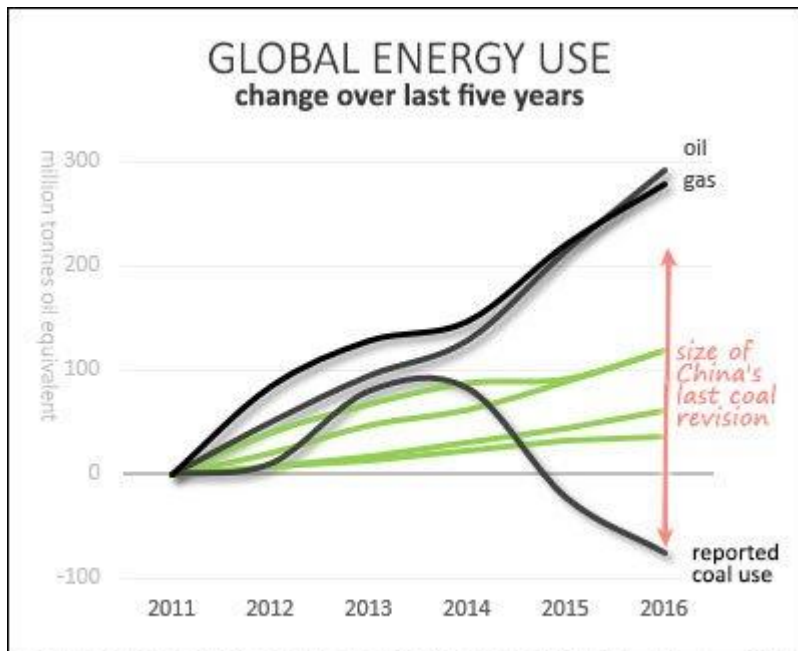


GLOBAL FOSSIL FUEL CONSUMPTION, 1990 - 2016. Percent of total energy consumption. SOURCE: Sum of Oil, Gas and Coal consumption vs total energy in BP Statistical Review of World Energy June 2017. CHART by Barry Saxifrage at VisualCarbon.org, June 2017

“...fossil fuels continue to absolutely dominate global energy consumption...a quarter century of global efforts to transition to safer energy sources was unable to make any meaningful dent in the dominance of fossil fuels.”

LESS COAL?

A glimmer of climate hope in the bad news?



GLOBAL ENERGY CONSUMPTION, 2011- 2016. SOURCE: BP Statistical Review of World Energy June 2017. CHART by Barry Saxifrage at VisualCarbon.org, June 2017.

But:

- **Measurements:** our atmosphere shows no sign of it
- **History:** China has huge under-reporting problems (as do other nations)
- **Human nature:** growing pressure to under-report and no way to catch it
- **Money:** new coal plant construction is booming worldwide.

Under reporting on coal use from China etc. could explain the discrepancy

What dies as the temperatures rise

0.6C higher

As temperatures increase beyond preindustrial levels, widespread extinction of amphibians begins.

1.0C higher

As warming causes ice sheets to melt, krill populations suffer, threatening the penguins' main food source.

1.6C higher

About half of wooded tundra is lost, putting pressure on its inhabitants such as moose, lynx and brown bears. Emperor penguins on Snow Hill Island, Antarctica.

2.2C higher

At warming just over the +2C limit agreed in Paris 25% of large mammals in Africa are extinct.

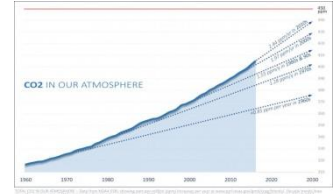
2.6C higher

Major loss of tropical rainforests and the species that depend on them for habitat, including orangutans, sloths and jaguars.

More than 4C higher

At these temperatures, up to 70% of species would be extinct, coral reefs would be dead and deserts would expand across the globe.

<https://amp.theguardian.com/environment/2017/sep/09/this-is-how-your-world-could-end-climate-change-global-warming>

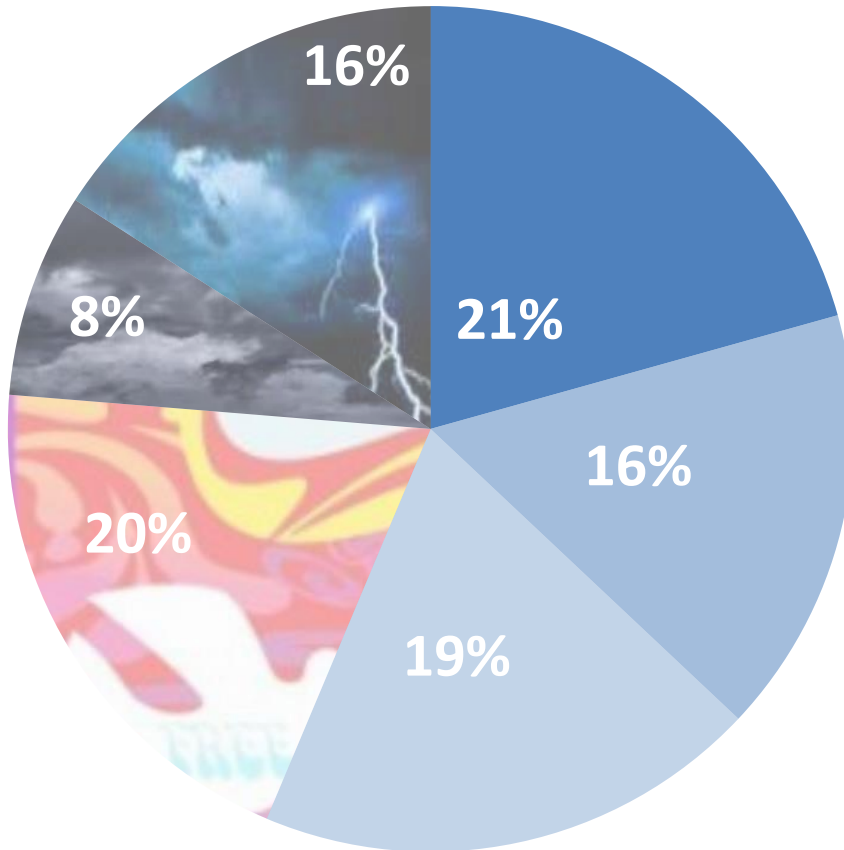


“Household carbon emissions ... are strongly related to income: **the richest 10 per cent of households emit three times that of the poorest 10 per cent** from energy use in the home and personal travel.”

23.5 million dwellings in UK.

Chart illustrates % of stock by approximate age of building.

Based on table DA1101 (SST1.1): Stock profile, 2015, EHS.

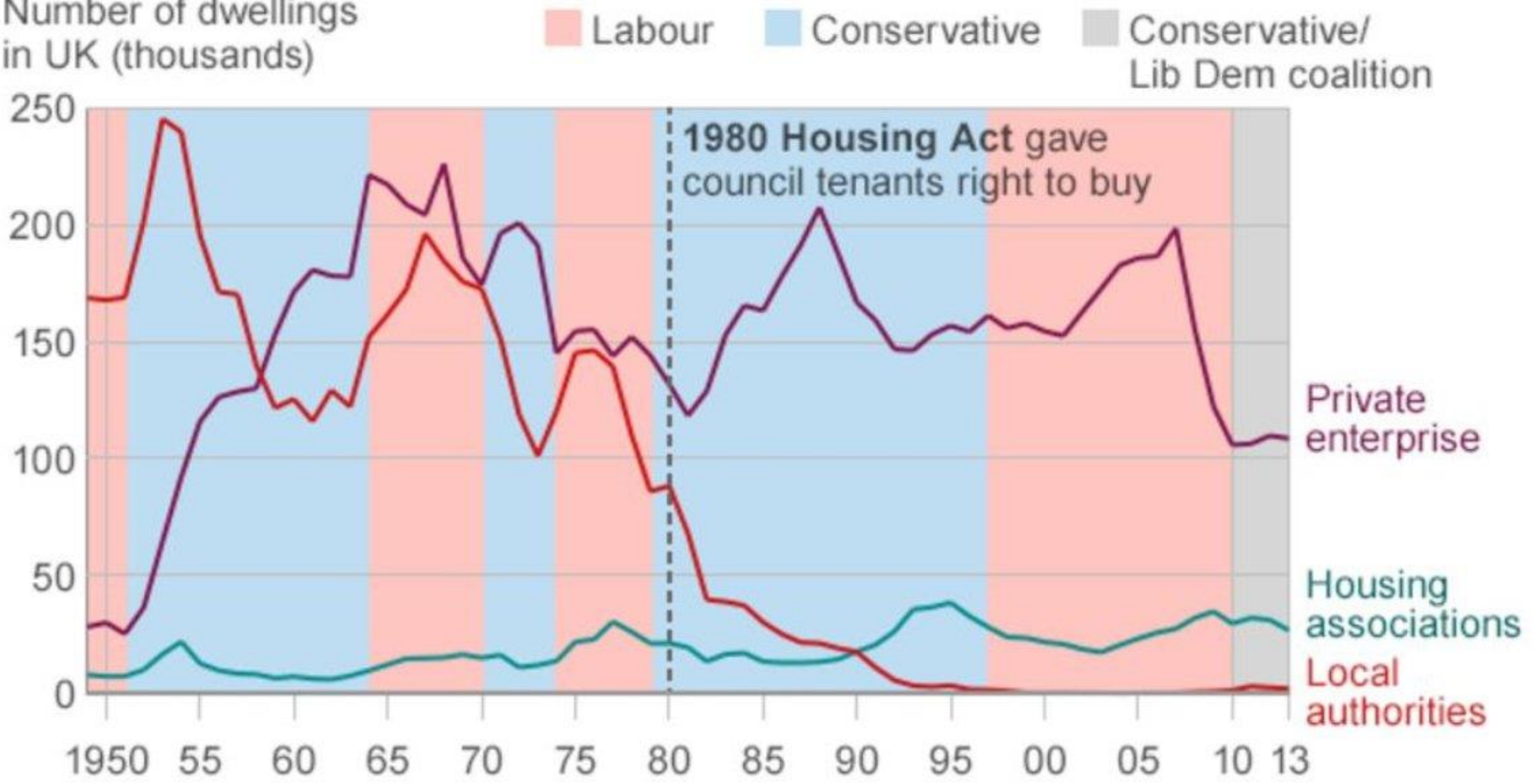


- over 100 yrs old
- between 70-100 yrs old
- between 50 - 70 years old
- built in the 1960's and 70's
- built in the 1980s
- built after 1990

Increasingly harder to retrofit

New homes built by private and social sectors, 1949-2013

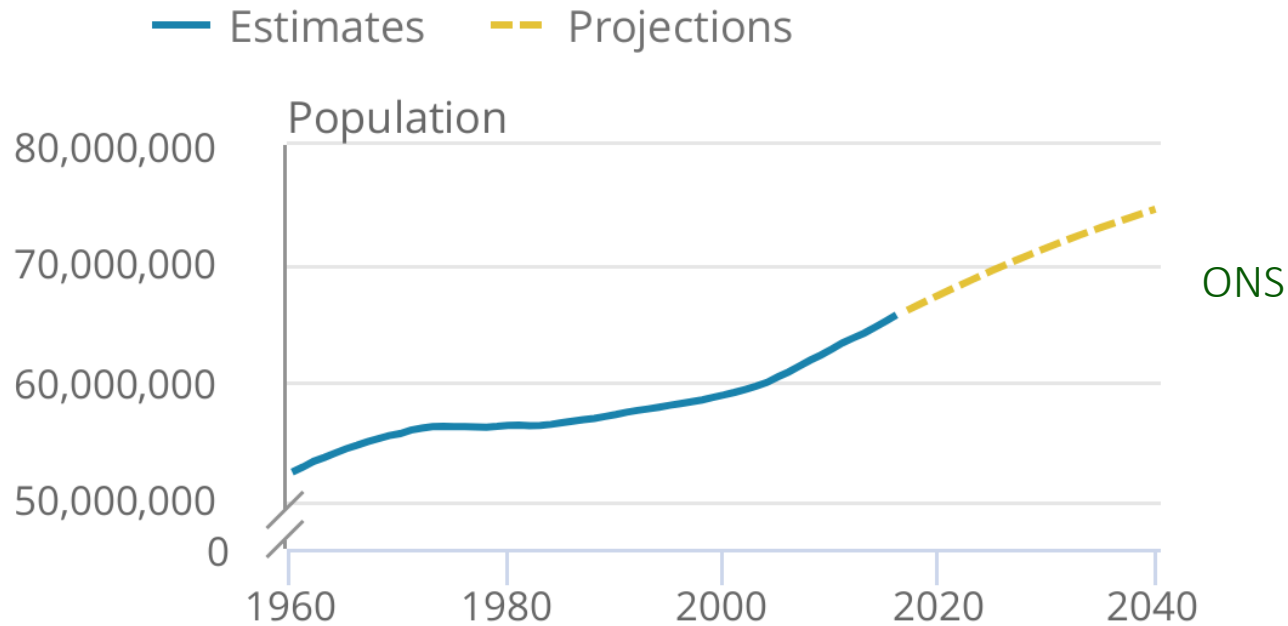
Number of dwellings in UK (thousands)



Source: Dept for Communities and Local Government



Figure 3: UK population estimates and projections, 1960 to 2030

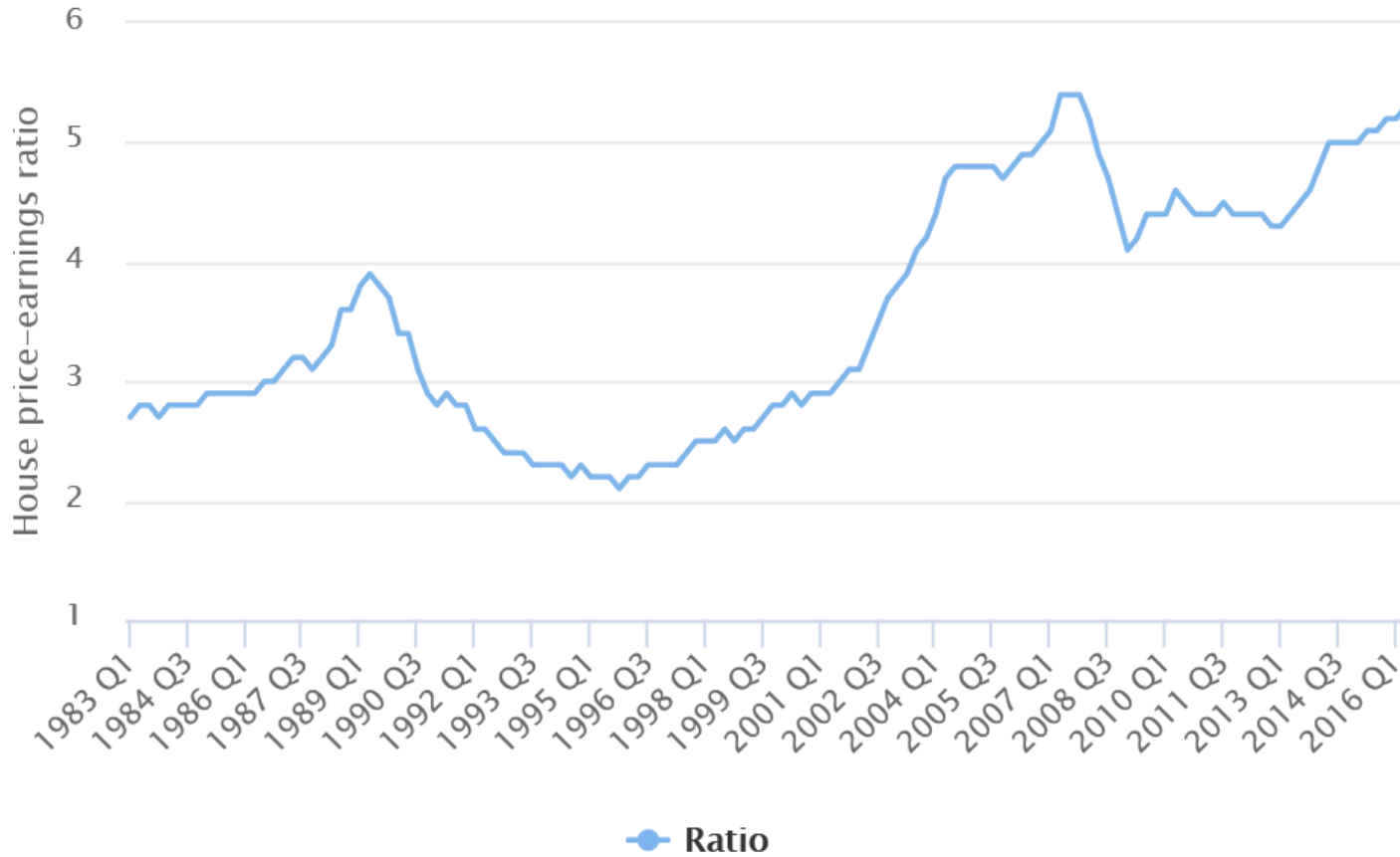


Source: Office for National Statistics

House prices vs real wages



Source: Nationwide

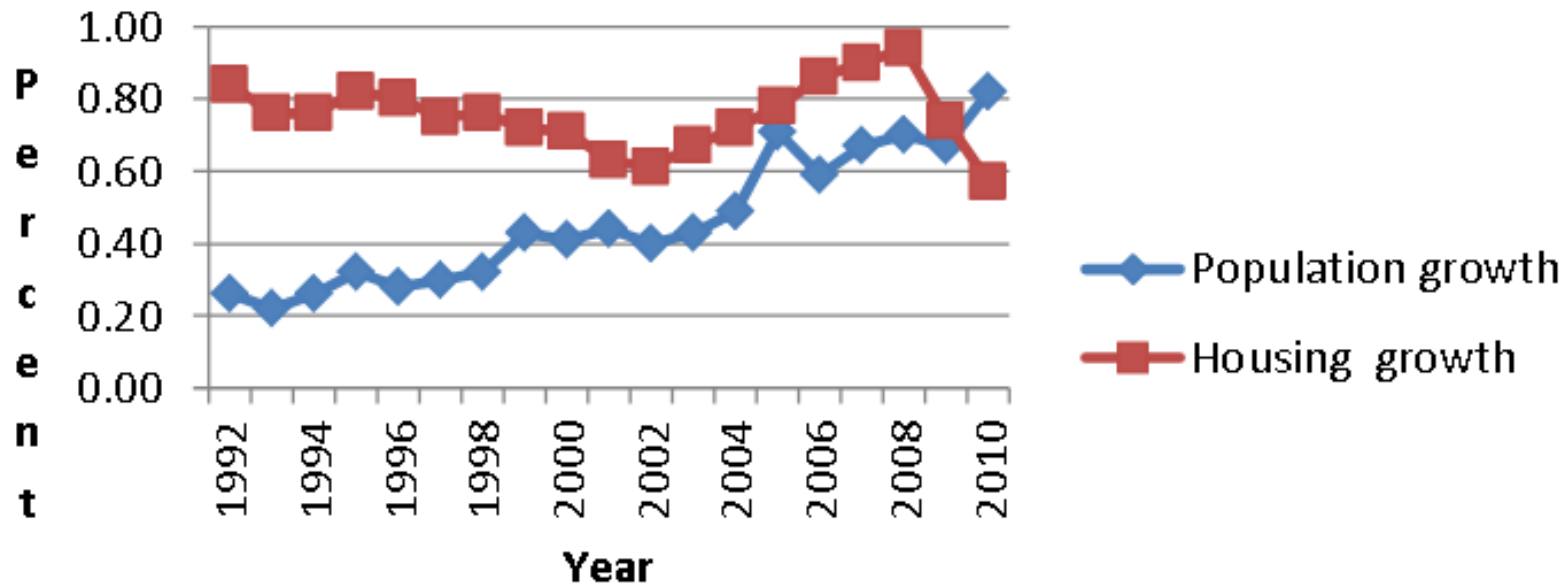


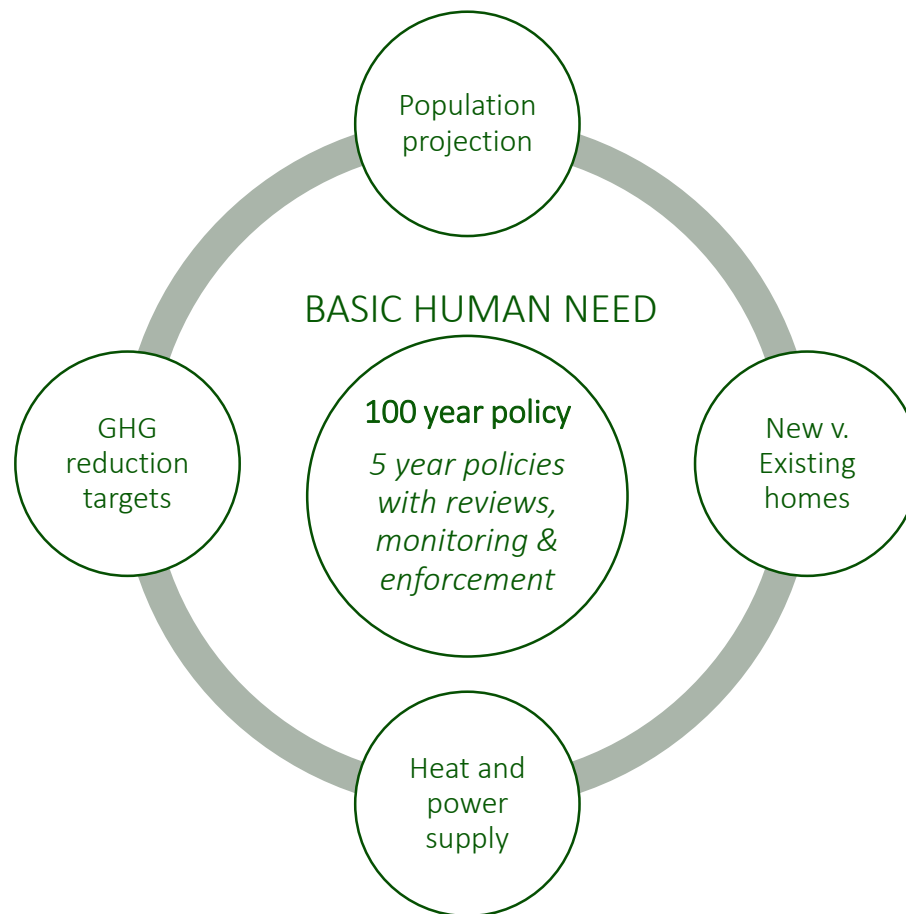
Highcharts

Annual percentage growth of dwellings and population

1992-2010 England

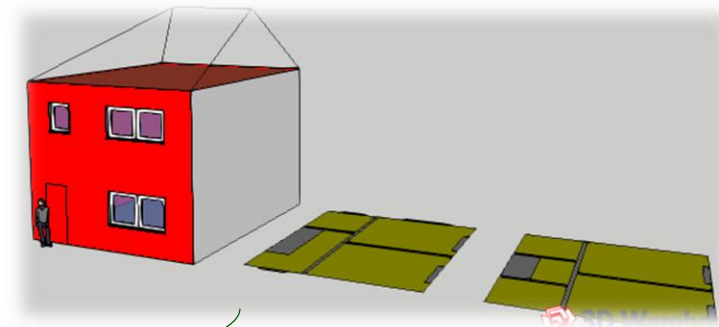
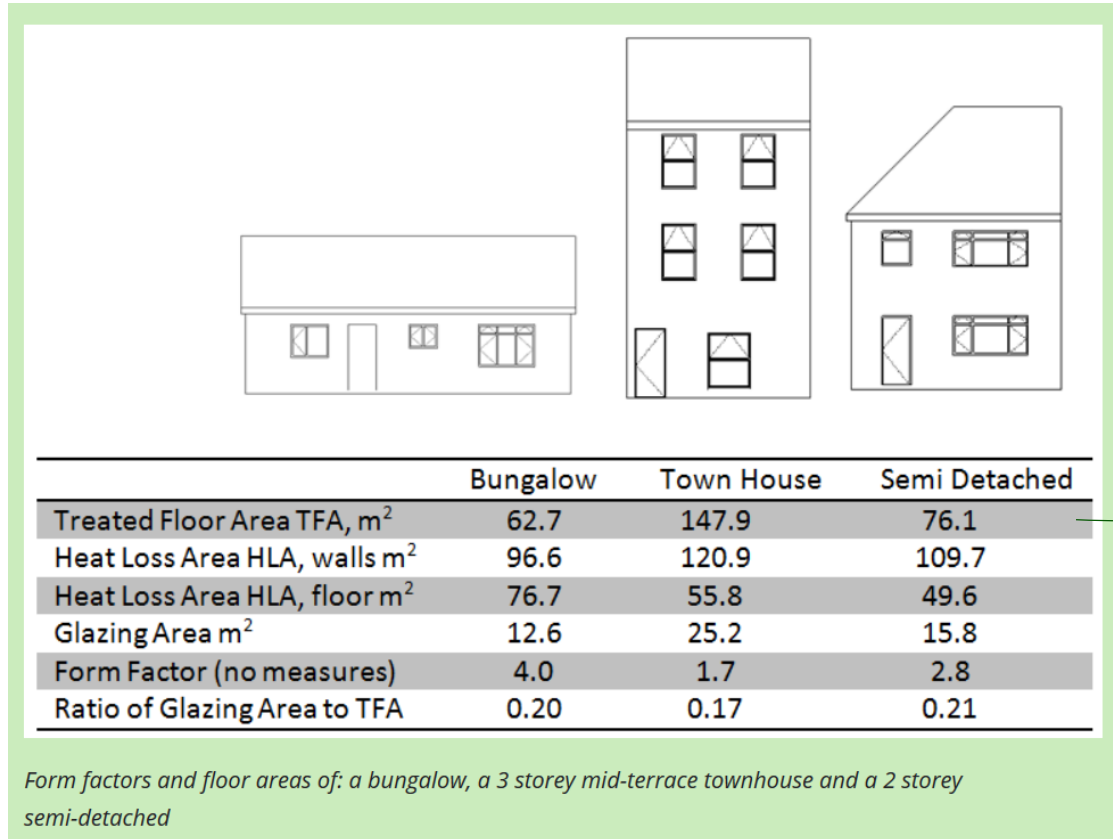
Source:ONS 2008-based population, CLG Table 104





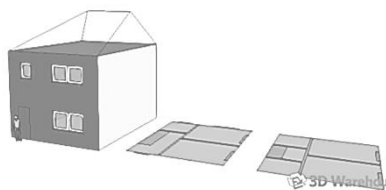
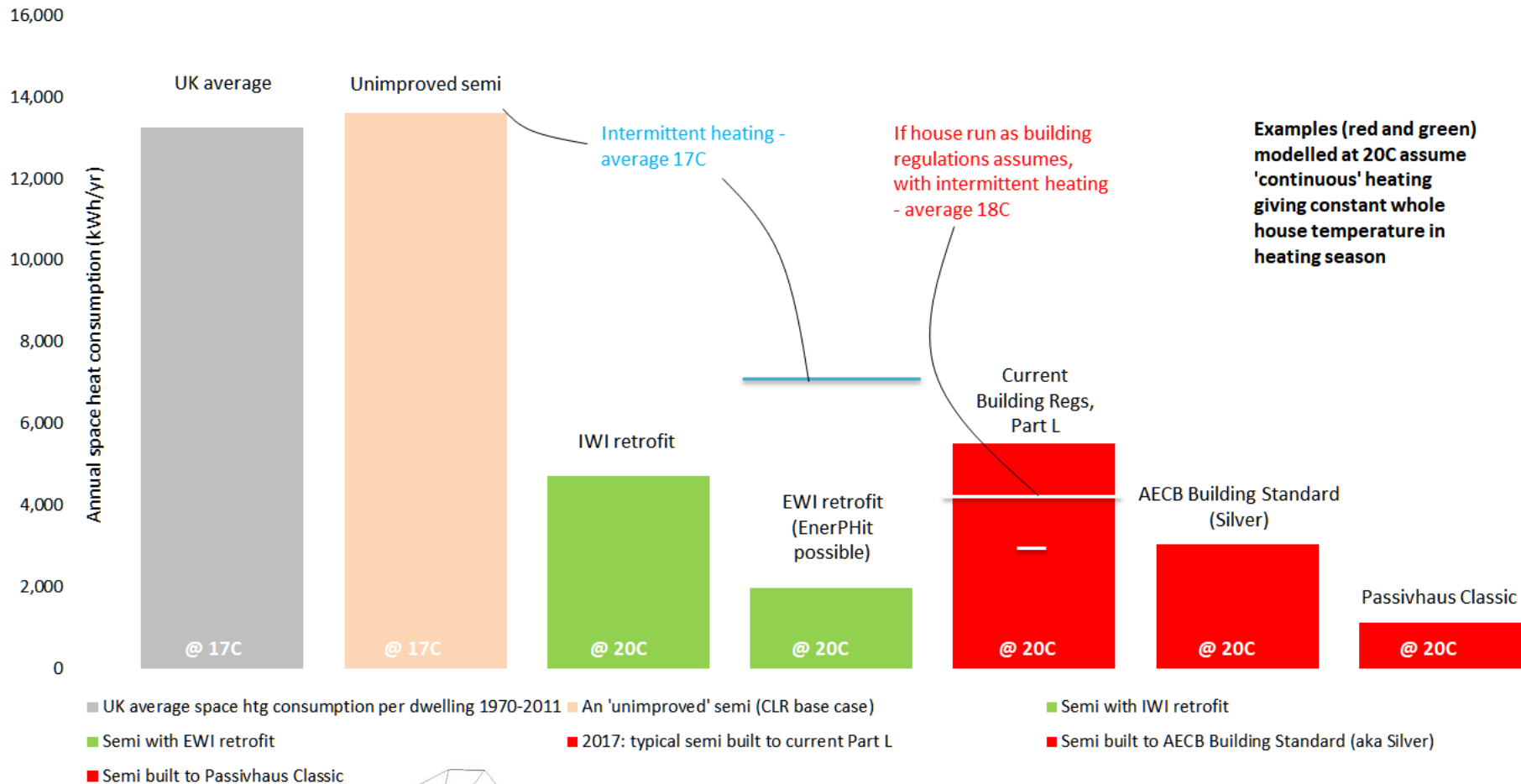
- Shelter – housing - is a basic human need that has massive impact on the biosphere in terms of quantity and quality.
- It can no longer be treated as a commodity, nor its policy the responsibility of individual 5 year political administrations.

- The technical knowledge exists to start to improve large numbers of existing homes safely
- It is easier to get high performance, more economically from new buildings
- New build standards should be way ahead of retrofit standards?



CarbonLite PHPP model

Comparing space heating energy consumption for a typical UK house built or retrofitted to different standards



Toby Lloyd
Policy Director at Shelter



Policy
Economics
Public Private
Innovative Financing
Research & Strategy
Co-housing and beach parties!

SESSION: Our reliance on speculative house building and the New Civic Housing Campaign