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#SEC2019

GETTING YOU FUTURE READY

Osborne Zone Presentations



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Contents: Osborne Zone

Session 1: Building Safer

Pages 04-17: The new world post Hackitt – organisational competency

Pages 18-26: Building a safer future – regulatory reform and the future of constructing tall buildings

Pages 27-43: Can you put a price on fire safety?

Session 2: Strategic Asset Management

Pages 44-80: Are high rise residential buildings financially viable for social housing providers?



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Contents: Osborne Zone (continued):

Session 3: The Environmental Landscape

Pages 81-104: Tackling the climate emergency

Pages 105-145: Old bricks, new tricks – tackling the retrofit challenge

Session 4: Plenary

Pages 146-157: Marathon running – lessons from the past for the future



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The new world post Hackitt – organisational competency



Keith Simpson - Co-Founder, National Housing Academy

Managing competency in the new world post Hackitt

A presentation to the SEC Conference by Keith Simpson –
Chair DWF and Director NHA

Introduction

- 76yrs old - 50yrs in the social housing sector
- Bricklayer - Director of Technical Services
- “Retired” 25yrs ago with renal failure - transplant
- Created Direct Works Forum 20yrs ago
- Created Just Housing Consultancy 15yrs ago
- Helped create the Apprentice Levy 4yrs ago– Nick Boles
- Co-created National Housing Academy 3yrs ago before Grenfell - Steve Makowski/Aileen Evans/DWF
- Created “To make housing safe ”

A walk down memory lane

- The demise of technical skills in the construction sector began when Thatcher prohibited LA's from building council houses in early 1980's– built 80/100000/year – private sector never picked this programme
- LA's large provider of legitimate apprenticeships, in-house architects, surveyors, clerk of works, project managers, supervisors
- The private sector developed their sub-contract model – became management contractors to reduce risk---few apprentices
- 20yrs ago John Prescott commissioned the Latham Report (Building the Team) and Egan Report (Re-Thinking Construction)
- Essentially found that apart from pockets of good practice, the construction industry was adversarial, claims conscious and grossly inefficient. Few recommendations actually implemented to date

A walk down memory lane

- 20yrs later building too few, poor quality, energy inefficient and expensive houses with virtually every major infrastructure project in delay or overspent
- New housing so expensive that few can afford without the flawed “Help to Buy” scheme – increased prices by 22% - 40000 social houses in 2010, 1400 in 2018
- Apprenticeships dumbed down from 3/5yrs to 1/2yrs. 5yrs apprenticeship led to Full Tech Cert equivalent to Degree Level based upon German Skills Standard – dropped in 1980’s
- FE Colleges are underfunded and unable to find lecturers capable or willing to train construction operatives
- Training Providers teaching soft skills e.g. admin, hairdressing, baristas etc
- Construction not promoted as a career in schools
- Ofsted causing chaos in skills training

Then Grenfell happened!!

- Not wholly a construction problem – refurbishing an existing 45yrs old tower block
- Unintended consequences of attempting to make tenants warmer in their homes
- Nothing learned from Lakanal House – panels, compart'n
- Poor specification, procurement, contract management, supervision, contractors and housing management– all issues of competence
- Dame Judith Hackitt appointed to undertake a review
- 14 Working Groups created led by CIC, CIOB, RICS, BRE, FSF etc – all involved in current working practices
- Most have a financial interest in delivering their recommendations – is this healthy?

Quote from a paper on Grenfell from Prof. Jose Torero – Key Witness

- In the 1970/80's moved from rigid regulations to guidelines not rules
- This introduced ambiguity into the construction process through allowing innovation
- Ambiguity requires greater competency – well defined competency becomes necessary
- We have also significantly enhanced the level of complexity which requires an even greater degree of competence
- Hence the core problem is our enormous misunderstanding of competence

NHA experience over 3yrs

- Existing apprenticeships poorly designed – not by sector
- Over 500 skills assessments undertaken of qualified and experienced operatives
- Over 50% were not sufficiently competent in all aspects of their job description
- Organisations presume that qualifications plus experience = competence
- Level 3 Advanced plumbers unable to fit a wash basin!!
- Supervisors no longer inspect completed work
- Few quality control procedures and rely on tenant feedback
- Technical Risk Management Systems not found

Just one example – fire doors

- NHA created four practical courses for DWF – fit, repair, maintain and inspect
- Over 200 operatives/surveyors trained – booked until next June
- Virtually no operatives could fit a fire door correctly
- If fitting was outsourced, no one was qualified to check installation
- Experienced operatives use wrong frame packers, wrong foam, wrong doors, wrong closers – 23 upside down, digital locks!!
- No national qualification includes fitting a fire door!
- 1000's of incorrect fire doors bought and fitted that did not meet British Standard
- Worryingly no procurement staff attended any of our courses – suggest local groups - 8/12
- Few FRA's undertaken correctly
- NHA developed “Fire Door Manager” software

Working Group's recommendations – “Raising the Bar”

- 67 recommendations
- Create a Building Safety Competence Committee
- Individuals working on HRRB's to be certified by a recognised professional body
- All Certification bodies to be rigorously overseen by a body such as UKAS or EC
- Building Safety Regulator to hold and maintain a national register of those qualified to perform key roles
- Period of reassessment every three years
- CPD to be established in each sector
- Tenants are the heart of the proposed processes
- Plus 60 more related to HRRB's

Hackitt findings on competence and procurement

- Demonstrable competence and process lacking at all levels in the build/refurbishment exercise
- New roles and increased responsibilities required in regulation, design, contractors, managers and operatives
- Competence is an ongoing process
- Procurement activities all too often carried out by individuals who are not wholly competent
- Need to grow our own procurement professionals – too much outsourced
- Too much focus on price at the expense of safety
- Need a balanced approach to decision making at every stage of the procurement process
- Cultural change required to achieve it

NHA view of “Raising the Bar”

- Hackitt is a once in a generation opportunity!!
- However it is a complicated ad hoc approach - difficult to grasp and implement
- Relies on numerous organisations delivering new initiatives
- Requires new organisations being created and resourced
- Requires new IT systems to manage new competency databases and competency based frameworks
- Proposes new job roles which will be difficult to fill in the medium term – already Hackitt complaining about “watering down roles”
- Preoccupied with individual competence when the challenge is to drive organisational competence

NHA view of “Raising the Bar” cont.

- Measuring PERFORMANCE is a key omission from the Hackitt definition of competence
- Hackitt principles will doubtless be rolled out across all social housing – 334 deaths from house fires – 72 at Grenfell
- Managing technical risk is the solution and we believe that creating the UKAS Standard for Competency Management in Housing is the key for organisations to coalesce around. Gain it and you address Hackitt!!
- Organisations and not Institutions and Third Party Organisations should take ownership of this via cultural change programmes
- Organisational Competency cannot be achieved without an IT system to manage the identified risks, new competency based frameworks and records of individual competency – simply not possible on spreadsheets as it is an ongoing process
- NHA have created BeCompetent IT system for the sector by the sector
- Demonstrating how organisational competence will keep tenants safe, will inevitably be required as part of the regulatory process

ANY QUESTIONS ?

An interesting fact on procurement – 25 of the 34 largest suppliers of our government's suppliers of goods and services, use off - shore tax havens and are on the EU's list of companies with bad tax behaviour, losing £186m globally in revenue!!

Be kind to me I'm an old man!!



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GETTING YOU FUTURE READY

Building a safer future – regulatory reform and the future of constructing tall buildings



Mark London - Partner, Devonshires

**Building a Safer Future – Regulatory Reform
and the Future of Constructing Tall Buildings**

Thursday 7 November 2019

Mark London
Partner
Construction and Engineering Group
Devonshires Solicitors LLP

The Proposed Regulatory Reform – The ‘tasters’ so far:-

1. The Building (Amendment) Regulations 2018 and subsequent guidance;
2. The MHCLG’s Advice Note 14 dealing with the obligation to take reasonable fire precautions; and
3. Subsequent advice note on balconies and rain screen cladding systems that are not of limited combustibility.

The focus is two-fold reforms:-

1. To ensure that going forward all the primary materials that form part of an external wall system are of limited combustibility; and
2. To persuade tall building owners to check the external wall systems on existing buildings and remediate where necessary.

Key features of the proposed reforms:-

1. It requires the existence of the Building Safety Regulator (“BSR”) and a considerable body of experienced staff;
2. It imposes wide ranging duties and obligations through the design, construction and occupation phases that can be enforced through the Building Act by the BSR;
3. The BSR will have oversight of a ‘tall building’ project from its initial inception right through to demolition of the building; and
4. The focus is primarily, but not exclusively, on fire and structural safety.

The Dutyholders:-

1. Client;
2. Principal Designer;
3. Principal Contractor;
4. Designer; and
5. Contractor

What do these proposed key features actually mean for clients, constructors and designers?

Pre-Construction

1. Gateway 1
2. Gateway 2
3. Assembling and retaining the Golden Thread of Information

What do these proposed key features actually mean for clients, constructors and designers?

Construction

1. Gateway 3
2. 'Major' changes

What do these proposed key features actually mean for clients, constructors and designers?

Occupation

1. The Building Safety Certificate
2. The Accountable Person and Building Safety Manager



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GETTING YOU FUTURE READY

Can you put a price on fire safety?



Simon Will - Project Director, Kier

Kurtis Lee - Head of Asset Management, LB Hammersmith & Fulham

Adam Kiziak - Fire Consultant, Oakleaf Surveying

Can you put a price on Fire Safety?

Building a safer future



Grenfell - June 14th 2017



Lakanal – 03/07/09



**Knowsley Heights -
05/04/91**



**Garnock Court –
11/06/99**

Dame Judith's final report; *“Building a Safer Future Independent Review of Building Regulations and Fire Safety”*

May 2018

*“This is most definitely not just a question of specification, **but of an industry that has not reflected and learned for itself, nor looked to other sectors.**”* – Dame Judith Hackitt

Building a safer future



Kings Cross



Piper Alpha

Central Regulatory issues identified

Summary:

“Indifference” – the industry’s overriding motivation is too often to complete projects **as quickly and as cheaply as possible**. Ambiguity concerning the interpretation of regulation and guidance is used to take advantage of the system **at the cost of the prioritisation of safety**.

Indifference ?

‘as quickly and as cheaply as possible’

What drives this behavior?

- A race to the bottom ?
- Price over quality ?
- Profit over safety ?
- Panic about status and historic performance?





A Time for Change!



A *'Universal shift in culture'*.

- **Collaborate** to spearhead culture change and be the voice of building safety across our sector.
- **Be transparent** in the interests of safety, sharing key information with residents, clients, contractors and statutory bodies
- **Make safety a key factor of choice in who we work with**, ensuring that building safety is placed at the centre of selection decisions
- **Ensure that the voices and safety of residents, visitors and employees are central in our decision making process.**
- **Set out and communicate clear responsibilities** ensuring everyone with a stake in the building understands their role and has the *time and resources* they need to achieve and maintain building safety.

Our response to Building a Safer Future

- This is not solely fitting kitchens and bathrooms **or general building work**- this is something else
- Increase **engagement** of residents in procurement, mobilisation, planning and delivery processes, capturing feedback to shape the way forward
- Fire Safety should, **at least** be seen as similar to Gas Compliance **in terms of regulatory overview**
- Ensuring the right **competence**, skills, certification, checks and balances are in place
- Greater emphasis on Training & Development **to ensure competence and experience are suitable**
- Integrity - More selective about opportunities- not being afraid to say no – **the 'race to the bottom' must be eliminated**

Early Adopters Overview

- Introduce clearer standards and guidance
- Put residents at the heart of the new system of building safety
- Help to create a culture change and a more responsible building industry

The logo for L&Q, featuring the letters 'L&Q' in a bold, black, sans-serif font.

WILLMOTT DIXON



BARRATT
HOMES

The logo for Wates, featuring the word 'Wates' in a blue, sans-serif font, followed by a stylized green and blue wave graphic.

Support we are seeking from the wider sector

- **‘Procure for Value’** – right balance between cost and quality
- **Early engagement** - of clients, residents & contractors into the design process and during bids to reduce potential risks
- **Early involvement** of Contractors into the management of occupied properties
- **Openness and collaboration** between all stakeholders

Q&A

***What are the biggest
obstacles to putting quality
and safety over price?***

***How can we overcome these
obstacles?***

***What has your organisation
done differently to promote a
change in culture?***

What were the results?

***What factors are inhibiting
some organisations to come
to terms with Fire Safety?***

What changes are needed?

How do organisations manage the cost fire remedial works without compromising other services?

How is Fire Safety considered when planning other works?



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GETTING YOU FUTURE READY

Are high rise residential buildings financially viable for social housing providers?



Colin Farrell - Partner, FFT

Neill Tickle - Director of Land & New Business, Optivo



SEC Conference 2019

Are HRRB's Viable for Social Housing?

effefftee.co.uk

Colin Farrell, FFT

Neill Tickle, Optivo



The Challenge

Most asset managers would likely agree that costs associated with management of HRRBs is rising and likely to increase further

So what should we think about in terms of viability when considering investment options ?

Viability Considerations for High Rise

Given the heightened risk profile and costs associated with the maintenance and management of existing (and new) high rise residential buildings, is the form viable for social housing in the future ?

Safety

Design /
Obsolescence

Fitness for
Habitation

Suitability for
Occupation

Financial
Viability

HRRBs – The Added Cost of Compliance

- Building Safety Case (£20k?)
- Building Safety Manager (£30k?)
- Fire Risk Assessments – Type 4? Compartmentation Surveys (annual survey?)
- Corrective Actions, repairs, improvements following FRA / FCS (No Action Not Optional)
- Reduced life expectancy of components for safety assurance (e.g. damaged fire doors)
- Enhanced cost of ‘standard’ component renewals for additional check/certification
- Is cladding replacement a one-off exercise? Or every 20 years?

Grenfell Inquiry – Possible Implications

- Develop and Maintain Evacuation Plans
- Building Plans for Emergency Services
- Inspect flat entrance doors (every 3 months for closers??)
- Evacuation signal equipment
- Enhanced lift inspections – monthly?
- High visibility signage
- Occupation of high level flats by mobile persons only?? Re-housing?
- Future extension of Inquiry Stage Two recommendations to 11m tall blocks

Other Factors

- Mortgageability of flats with cladding
- Impact on market value and sales, including shared ownership staircasing
- Ability to recover leaseholder contributions for exceptional work / defect rectification
- Moral responsibility of landlords to do work and worry about charging later
- Moral responsibility of ensuring homes are safe to let
- **Scale of the issue – G15 RPs own 1,145 buildings more than 18 metres – remedial costs estimated at £6.9 billion**

Modelling Scenarios



2013 built, 8 Storey Block with
A1/A2 (Compliant) cladding, 32
tenanted flats



1965 built, 16 Storey Block with
original walls, 93 tenanted flats



1963 built, 13 Storey Block with
Non-Compliant cladding, 66 units
including 10 Leaseholders



Example 1
2011 built
8 storey block

Example Block 1

- 2011 built
- 8 Storey
- 24 Flats
- No Leaseholders
- **A1/A2 Compliant** Ext Cladding System
- Balconies
- Sprinkler Systems and Fire Alarms installed
- Balconies with timber decking

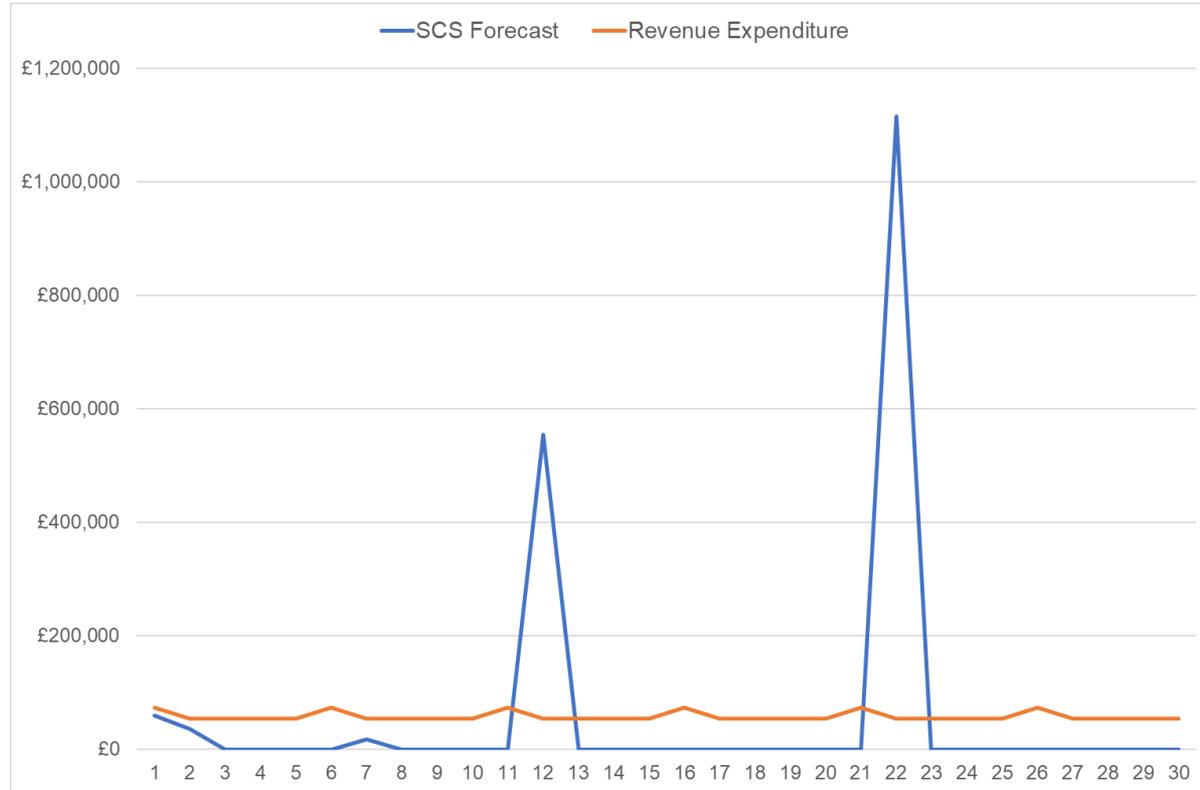
Exceptional Major Repair Required

- Replacement timber balcony decking
- Some prematurely weathered timber external cladding (small panels)
- Replacement of some damaged internal fire compartment doors
- Replacement of some damaged internal flat entrance doors
- Internal communal area redecoration due

SCS Forecast Investment Profile

Highlights

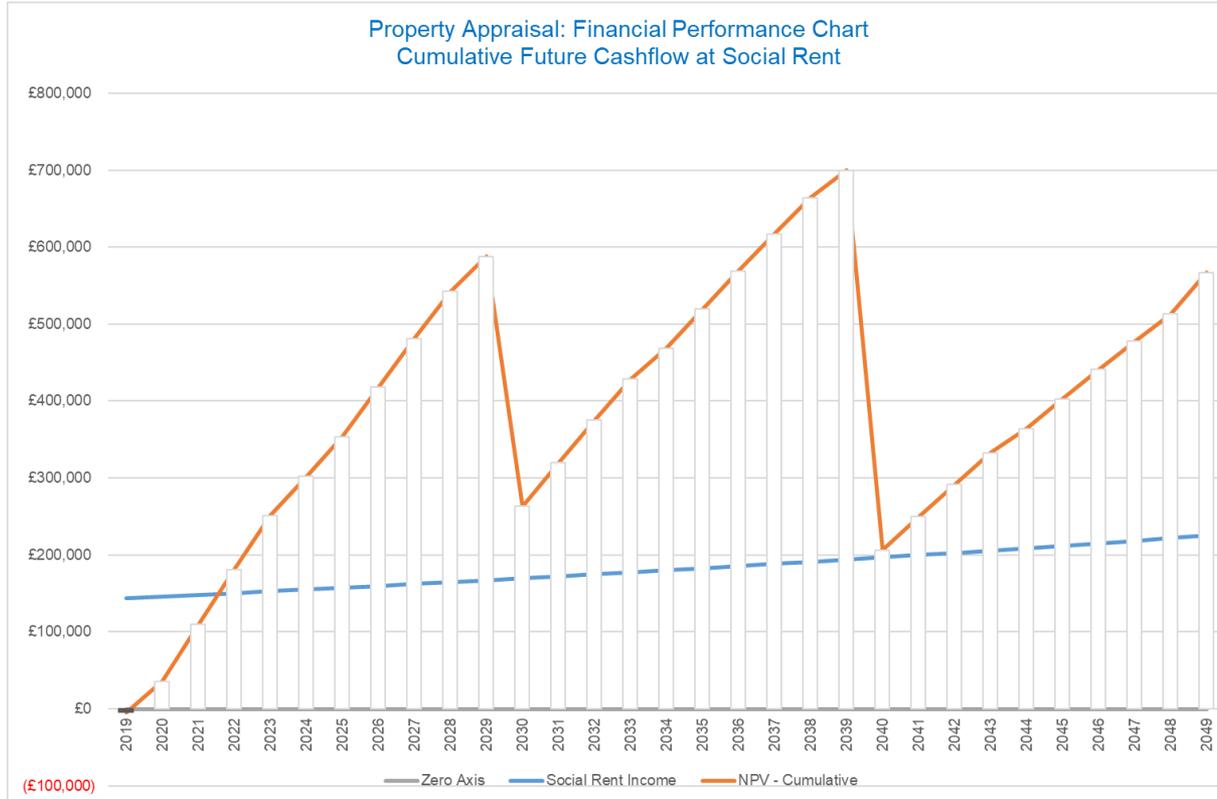
- £40k backlog
- Int Cyclical Decs.
- New Roof, Lift and FDs @ yr 12
- Ext Envelope refurb in yr 22
- Building Safety Case every 5 years
- £25k pa for Building Safety Manager role
- 5% void loss pa



Financial Performance

NPV Positive

- 30 Yrs
 - £566k
 - £23k pu
- 10 Yrs
 - £587k
 - £24k pu
- 5 Yrs
 - £251k
 - £10k pu





06/12/2017

Example 2

1965 built
16 storey block

FT

Example Block 2

- 16 Storey
- 93 Flats
- 1965 built
- Original Concrete / Brick Ext Walls

- Fire Alarm
- No sprinkler system
- 2 Lifts, 1 Staircase

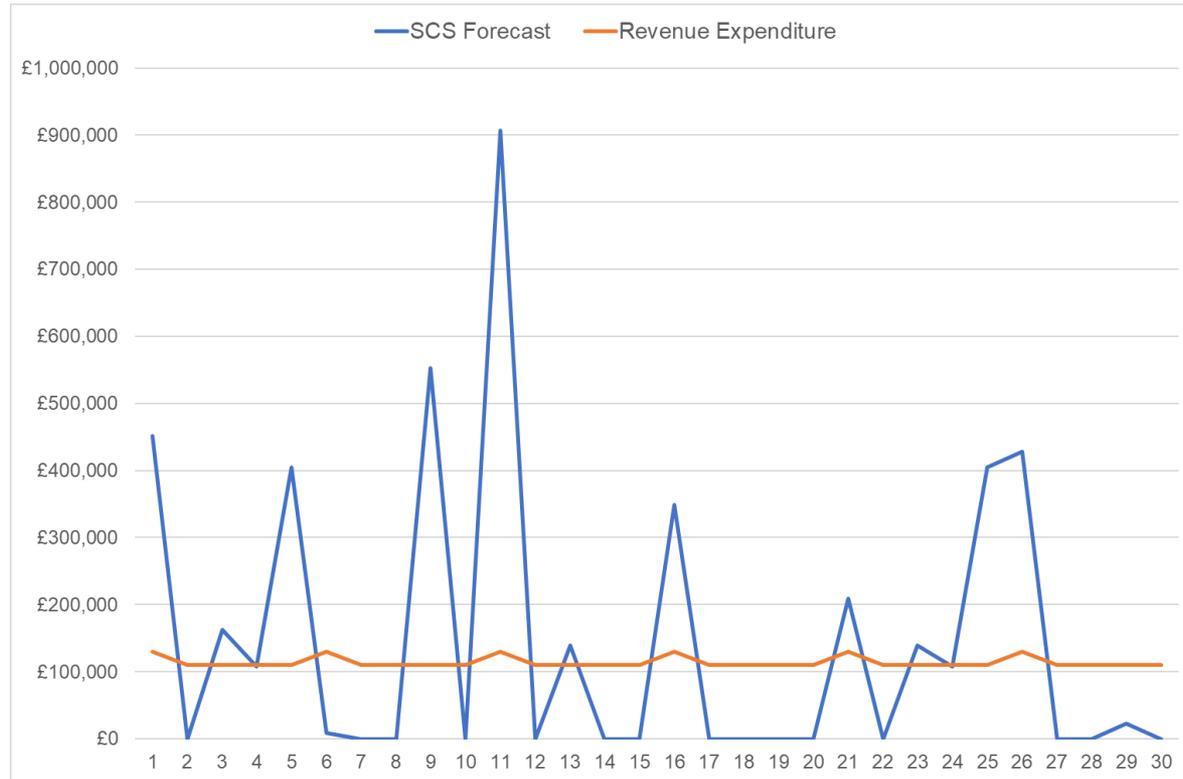
Exceptional Major Repair Required

- Minor concrete repairs to frame
- Renewal / upgrade of internal fire compartment doors
- Renewal / upgrade of internal flat entrance doors
- Internal communal areas refurbishment

SCS Forecast Investment Profile

Highlights

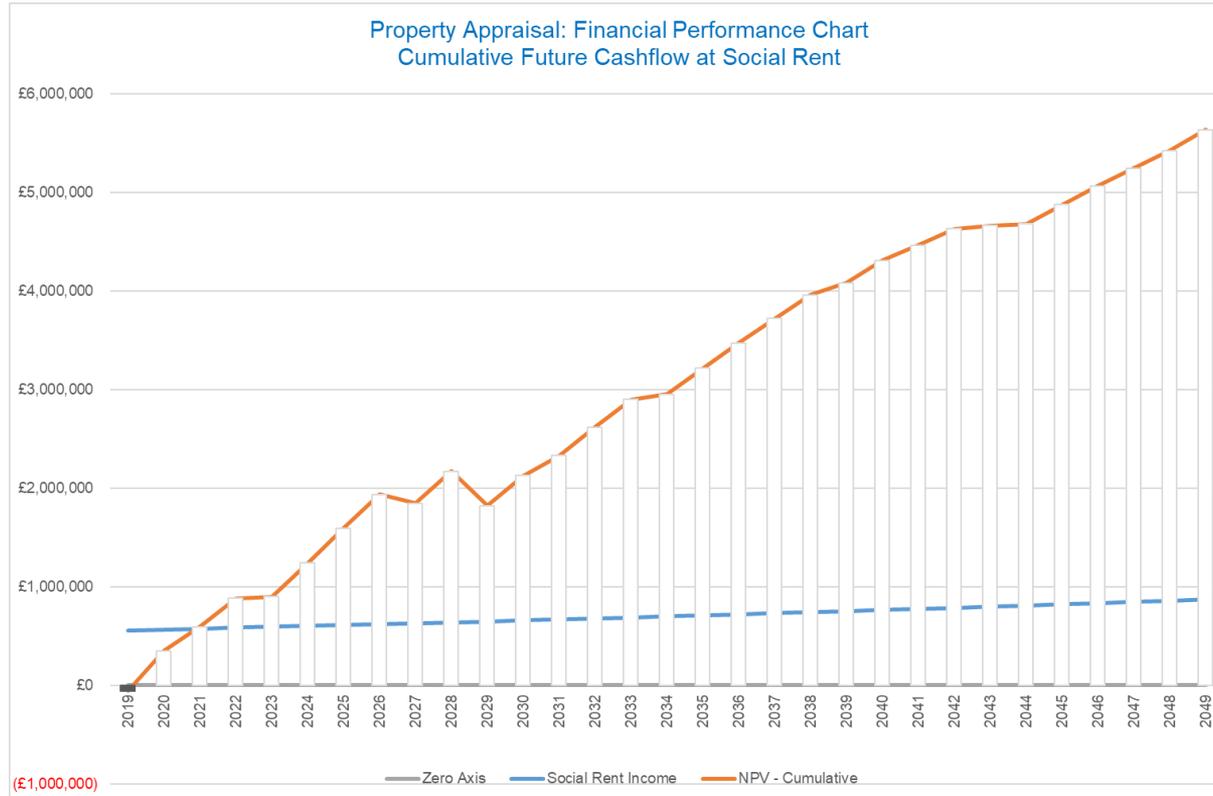
- £50k backlog
- New Fire Doors in Yr 1
- Int Cyclical Decs. Yr 3
- New Roof @ yr 4
- Decent Homes Internal Works less than 10 years old
- Building Safety Case every 5 years
- £25k pa for Building Safety Manager role
- 5% void loss pa



Financial Performance

NPV Positive

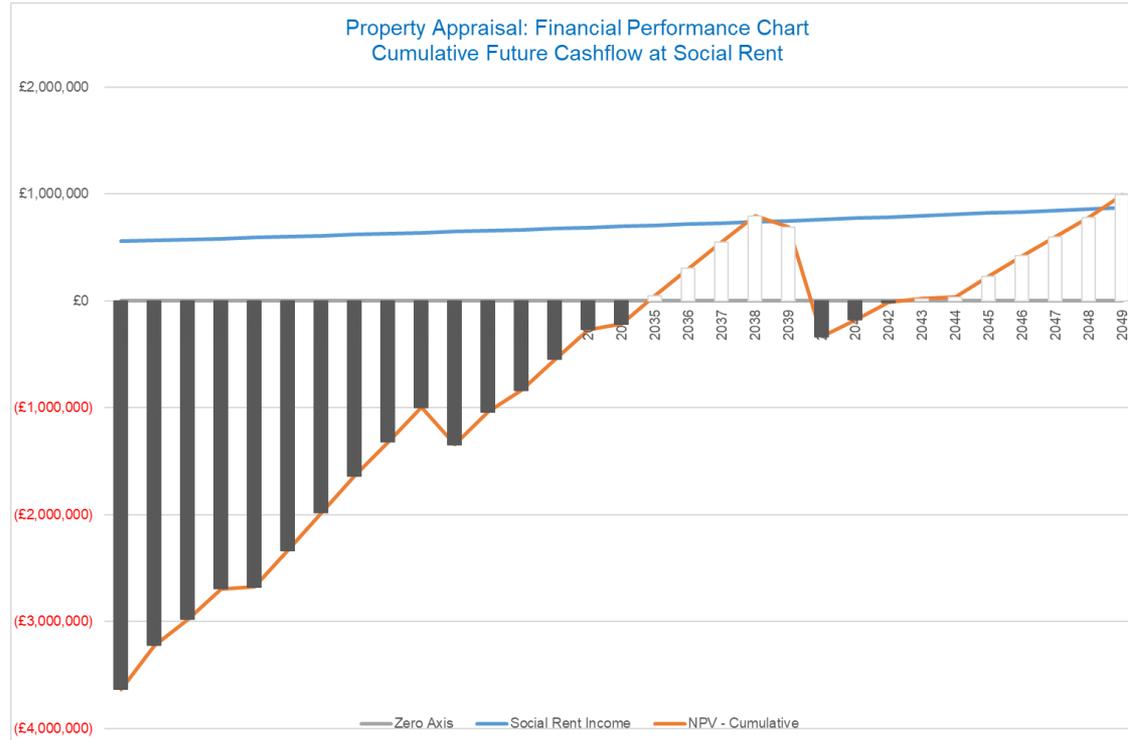
- 30 Yrs
 - £5.6m
 - £60k pu
- 10 Yrs
 - £1.8m
 - £19k pu
- 5 Yrs
 - £898k
 - £9k pu



Financial Performance with Cladding and Sprinklers Installed

NPV Negative

- 24 Year Payback
- 30 Yrs (positive)
 - £992k
 - £10k pu
- 10 Yrs
 - -£1.3m
 - -£14k pu
- 5 Yrs
 - -£2.7m
 - -£28k pu





FTI

Example 3
1962 built
13 storey block

Example Block 3

- 13 Storey
- 66 Flats
- 1963 built
- Non-Compliant Cladding
- Poor condition internal communals
- New Lifts and Internal Communal Areas Require Upgrade
- Fire Alarm Exists
- No sprinklers

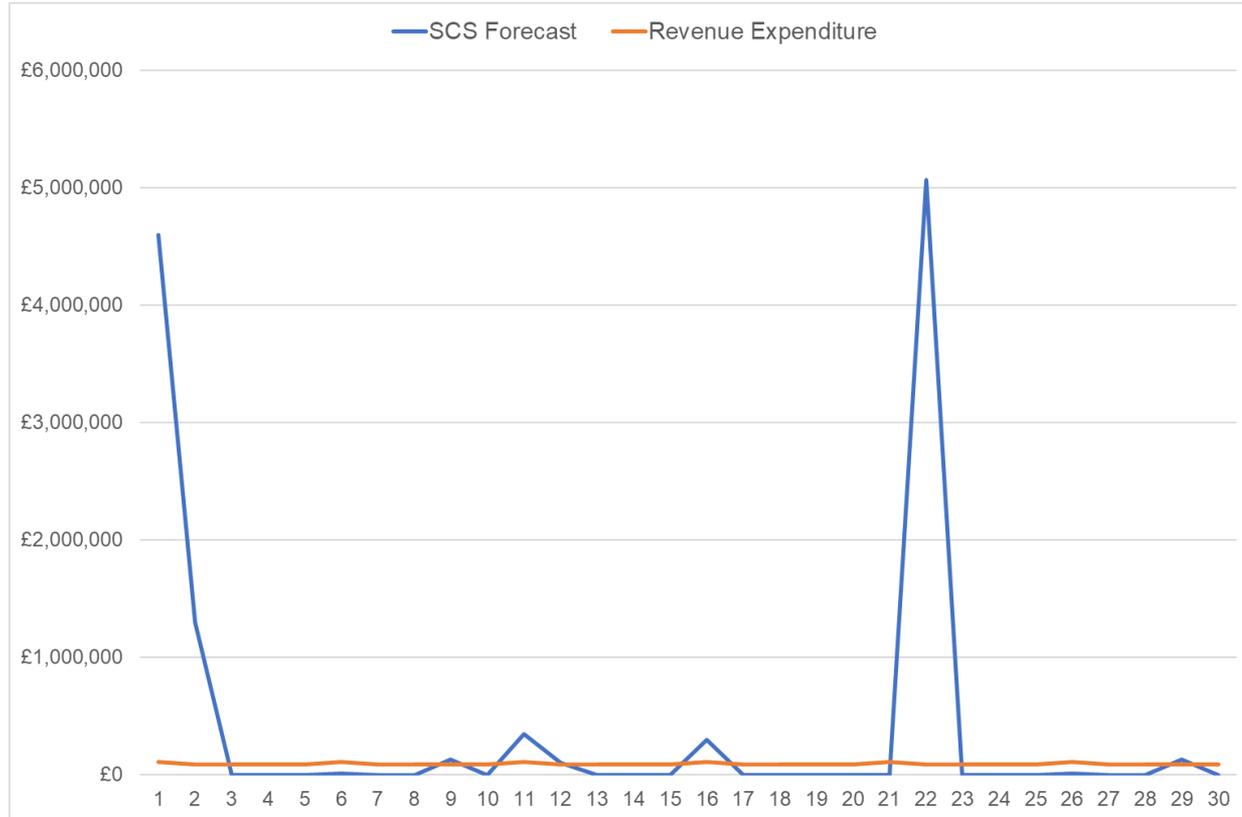
Exceptional Major Repair Required

- Major Overhaul of Communal Areas include new lift (1 No)
- Replace non-compliant cladding and associated windows
- Replace gas heating systems with electrics

SCS Forecast Investment Profile

Highlights

- £3m cladding and ext windows
- £500k int common parts upgrade
- Longer term reinvestment in dwelling works

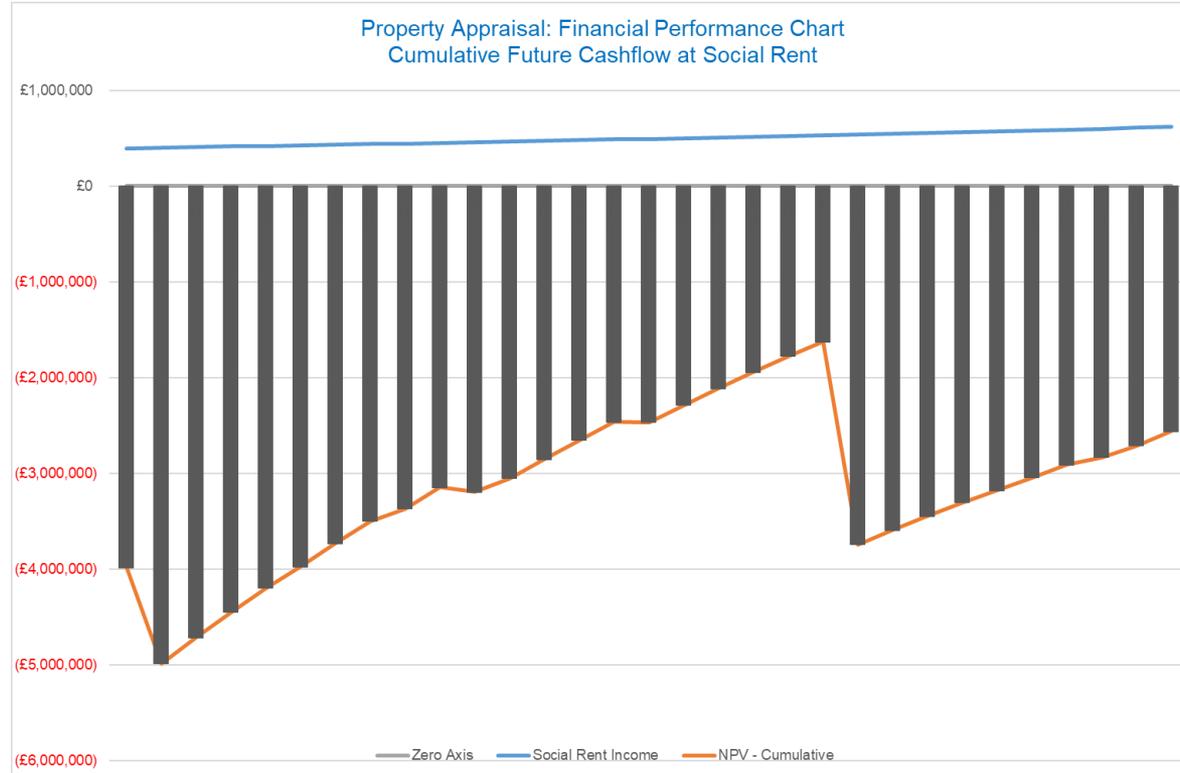


Financial Performance

Scheme

NPV Negative

- 30 Yrs
 - -£2.5m
 - -£88k pu
- 10 Yrs
 - -£3.1m
 - -£48k pu
- 5 Yrs
 - -£4.2m
 - -£63k pu



Conclusions

- Financial viability of existing stock can be positive but heavily dependent on current condition and short-term investment liabilities.
- High levels of investment in early years has negative impact on NPV and payback period may be prohibitive
- Assumptions about demand and letting income have a significant impact on financial viability assessments. Think about risk of low demand and voids especially in the context of:
 - Resident perceptions of safety
 - Design and performance factors (e.g. energy, accessibility, space and layout)
 - Potential pressure on landlords in future to better match accommodation to occupiers (is high rise living suitable or appropriate for people with mobility or other health issues?)
 - More void turnover = financial losses = reduced viability
- Think realistically about the expected life of components in particular non-discretionary maintenance
 - E.g. cladding, fire doors, fire alarms, sprinklers
- Many other broader considerations arising from Grenfell Inquiry likely to have cost and risk implications that will impact on viability



Faithorn Farrell Timms is an award-winning surveying and property consultancy, providing professional services to the housing, education, blue light, leisure and private sectors.

Orpington

Brighton

Potters Bar

Cardiff

Gateshead

effefftee.co.uk



BUILDING HOMES
MAKING PLACES
ENHANCING LIVES

Developing Tall Buildings

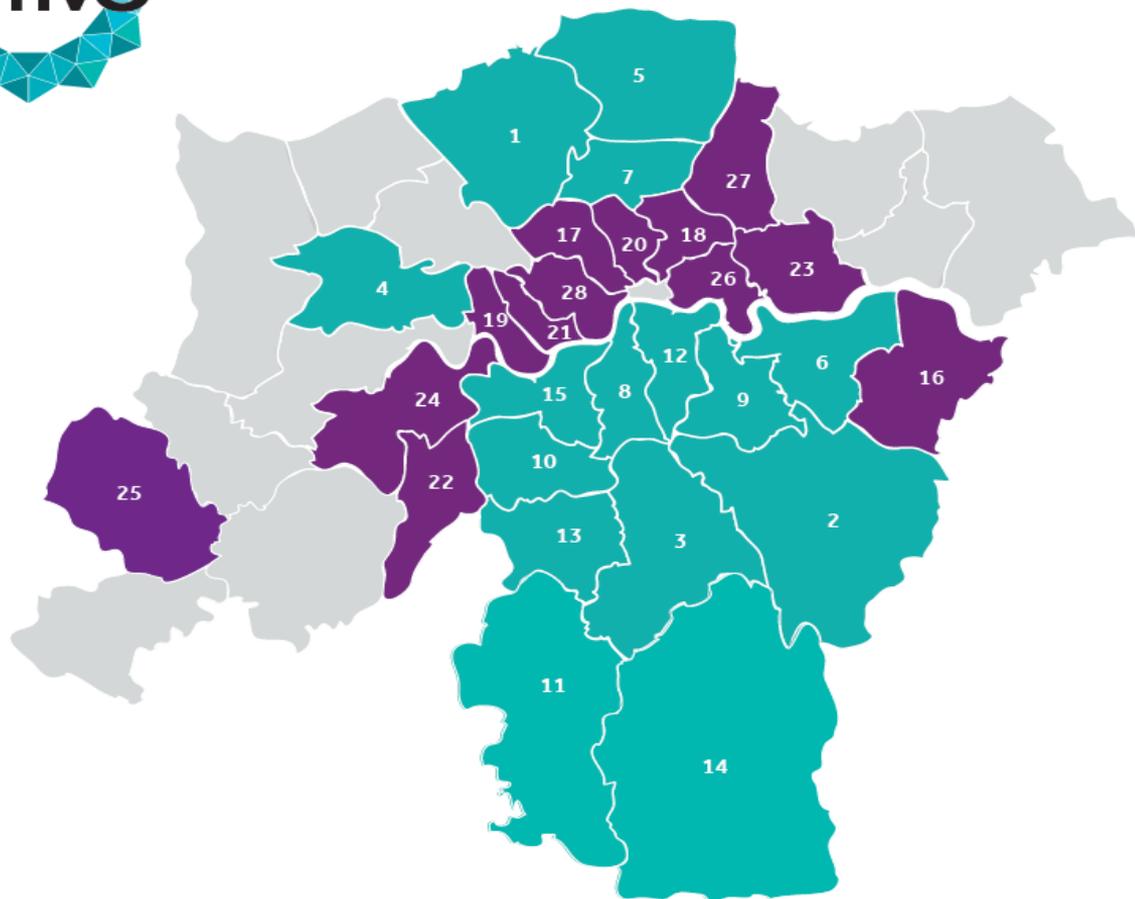
Neill Tickle

7 November 2019





Development Growth Areas London and Surrey



Priority 1 areas

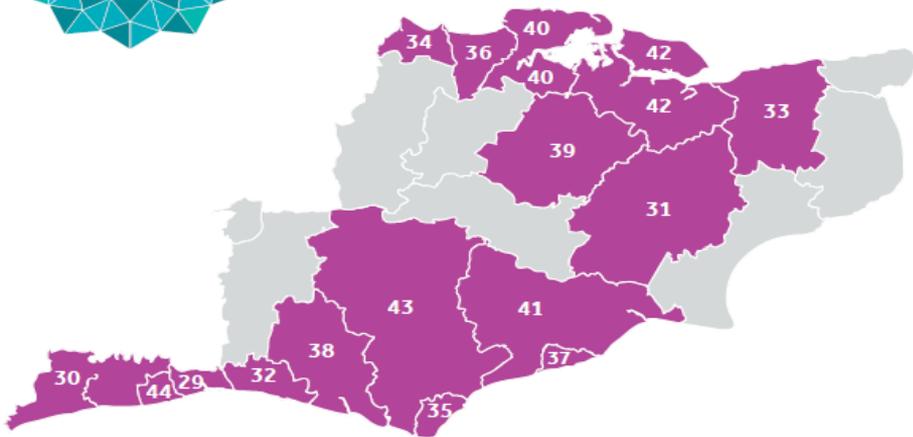
1	Barnet	1270
2	Bromley	1429
3	Croydon	3461
4	Ealing	310
5	Enfield	477
6	Greenwich	860
7	Haringey	336
8	Lambeth	3053
9	Lewisham	1394
10	Merton	608
11	Reigate and Banstead	322
12	Southwark	2229
13	Sutton	606
14	Tandridge	183
15	Wandsworth	3751

Priority 2 areas

16	Bexley	18
17	Camden	396
18	Hackney	138
19	Hammersmith and Fulham	178
20	Islington	0
21	Kensington and Chelsea	591
22	Kingston upon Thames	84
23	Newham	1
24	Richmond upon Thames	0
25	Runnymede	388
26	Tower Hamlets	131
27	Waltham Forest	1
28	Westminster	100



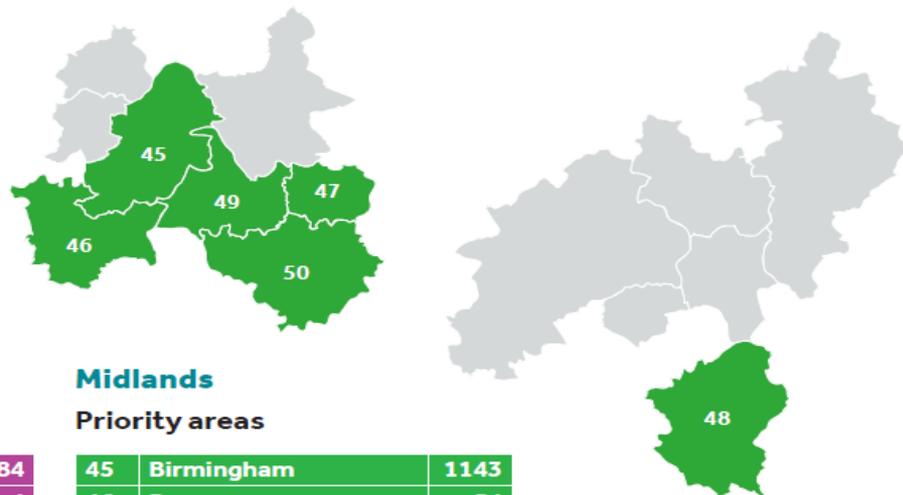
Development Growth Areas – Counties (Kent, Sussex & Midlands)



Kent and Sussex

Priority areas

29	Adur	20	38	Lewes	84
30	Arun	903	39	Maidstone	4
31	Ashford	52	40	Medway	227
32	Brighton and Hove	108	41	Rother	3282
33	Canterbury	187	42	Swale	6985
34	Dartford	127	43	Wealden	71
35	Eastbourne	787	44	Worthing	297
36	Gravesham	110			
37	Hastings	4324			



Midlands

Priority areas

45	Birmingham	1143
46	Bromsgrove	54
47	Coventry	0
48	Milton Keynes	429
49	Solihull	69
50	Warwick	173

Optivo Growth Strategy 2019/22



- **We'll start 4,850 new homes by March 2022**
 - **At a total cost of c£1.72bn**
 - **90% will be affordable homes with grant already secured**
 - **55% London & Surrey, 45% Outside London**
 - **Focus on sites 50 homes to 200 homes**
 - **Land, Packages, s106 (with SHG), Options, Regen, JVs etc.**
 - **Given our areas of operation lots of tall buildings**
-

Optivo's Approach



- **Lots of interest from across the business**
 - **Created Optivo 'Tall Buildings Working Party'**
 - **What Constitutes a Tall Building?**
 - **Hackitt Definition – over 18 meters**
 - **'Quick Wins'**
 - **Seek factual data on capital and revenue costs**
-

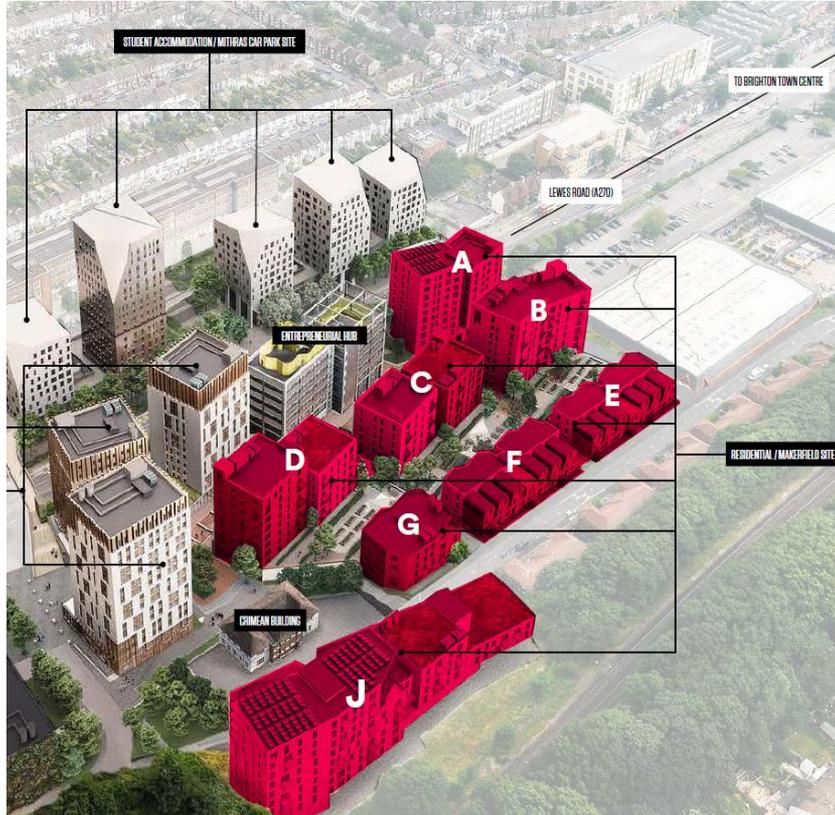
Scheme CGIs - London



Sky Garden, Vauxhall – Riverside and
Alton Rd in Wandsworth

Scheme CGIs - Counties

Makerfield, Brighton



Tall Building Outcomes



- **We have 104 buildings in management over 18 meters**
 - **Evidence of capital costs is easier to assess**
 - **Increased capital cost based on storey height:**
 - 0-6 stories. Base Cost
 - 7-10 stories. +10%
 - 11-19 stories. +15%
 - 20-25 stories. +22%
 - **No buildings over 25 stories**
 - **Consider family homes and each scheme amenity offer**
-



1. 'Building a Safer Future' measures
 2. Consider what height is too high!
 3. Consider the right appraisal costs to use
 4. Consider scheme mix - family homes vs amenity space.
-



BUILDING HOMES
MAKING PLACES
ENHANCING LIVES

Thanks, any questions?

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GETTING YOU FUTURE READY

Tackling the climate emergency



Andy Merrin - Head of Energy & Innovation, ENGIE

Craig Hattley - Partner, calfordseaden

Jon Warren - Market Maker - Industry, Energiesprong UK

SEC Conference 2019

“Tackling the Climate Emergency”

Andy Merrin, ENGIE
Head of Energy & Innovation



ENGIE

Confidential



Limited



Internal





 **Strategic Direction**

- ▶ Decarbonise
- ▶ Digitalise
- ▶ Decentralise

Sustainable Services
Global Operations
€60bn Turnover p.a
Massive investments in R&D / Innovation

ENGIE in the UK

€33 bn Turnover p/a 17000 Employees 

Acquired Keepmoat Regeneration (now ENGIE Regeneration) in 2017

Energy – Services – Regeneration

Places & Communities

- ▶ Social Housing
- ▶ Local Government
- ▶ Healthcare
- ▶ Education
- ▶ Urban Energy
- ▶ Other Community Serving Organisations



“Creating sustainable places for everyone to work, live and play in”

Business Energy & Services



Energy Infrastructure



Local delivery backed by Group resources



The Panel



- Craig Hattley - Partner, Calford Seaden



- Jon Warren - EnergieSprongUK



- Q&A





calfordseaden

TACKLING THE CLIMATE CHANGE – IN NEW BUILD

CASE STUDY – RAF WYTON



Project Description

Detailed planning permission for residential development of 595 dwellings including 193 dwellings of retirement accommodation; a neighbourhood centre including shops, services a community hub incorporating health uses.

Outline planning permission for up to 105 Dwellings including 30 custom-build and custom-build housing and 57 dwellings of retirement accommodation; 150 dwellings of extra care accommodation and 68 care beds

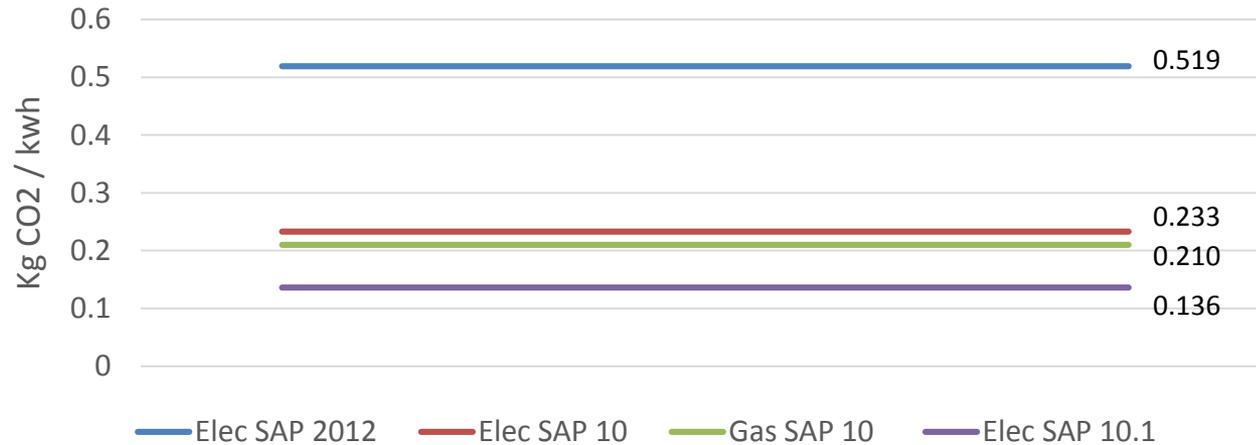
Project Brief / Goals

Create a unique high quality development offering a low carbon / affordable place to live. Fully exploring new and emerging technology.

Notable site constraints

- Noise
- Lack of gas infrastructure and limited electrical infrastructure

EMERGING SAP 10



Gas heating 2025

Gas heating ban for new homes from **2025**. **Gas heating** for new houses will be banned by **2025**. Homes will keep warm with devices such as **heat pumps** and with “world-leading” insulation standards

OPTIONS ASSESSMENT

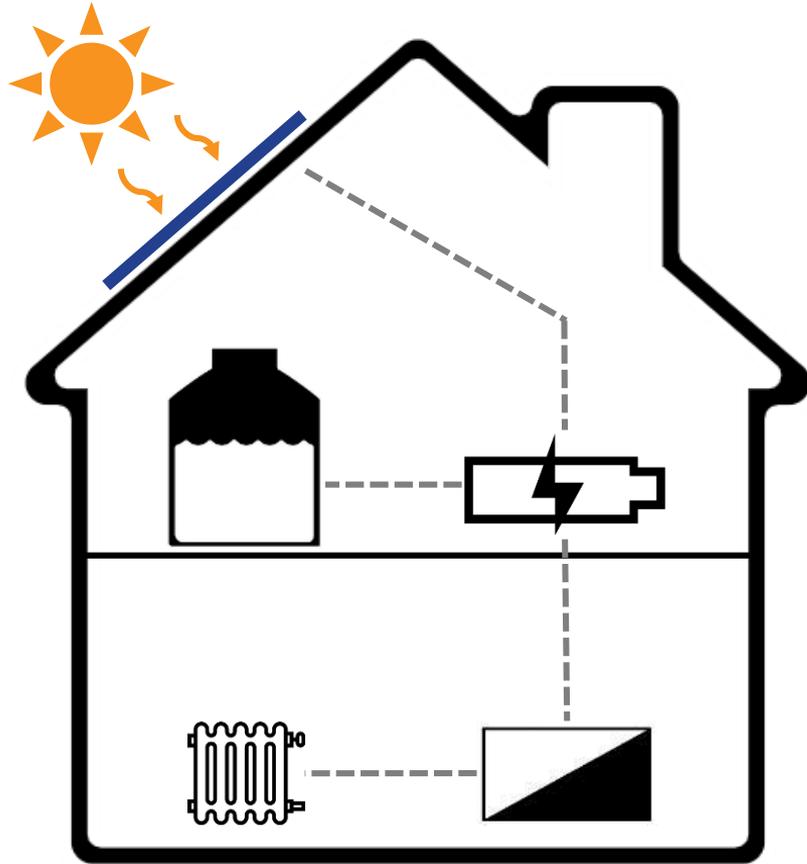
Following a fabric first approach, the below options were assessed

1. Gas Boiler / Photovoltaic and Solar Thermal arrays
2. Electric heating /hot water with Photovoltaic array
3. Electric Heating / Photovoltaic and Solar Thermal arrays
4. Heating / hot water supplied via a ASHP with Photovoltaic array
5. Heating / hot water supplied via a ASHP with Photovoltaic and Solar Thermal array
6. Ground Source Heat Pumps (GSHP) were also reviewed in lieu of ASHP



1. Reduction of energy demand
2. Maintenance/Running/Operating Cost
3. Carbon emission savings SAP12/SAP10
4. Impact on local utilities networks
5. Capital Cost
6. Life cycle replacement

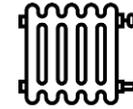
FABRIC + PV + BATT



SAP 12



1.6%



Elec

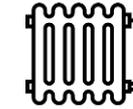


1kwp

SAP 10



34%

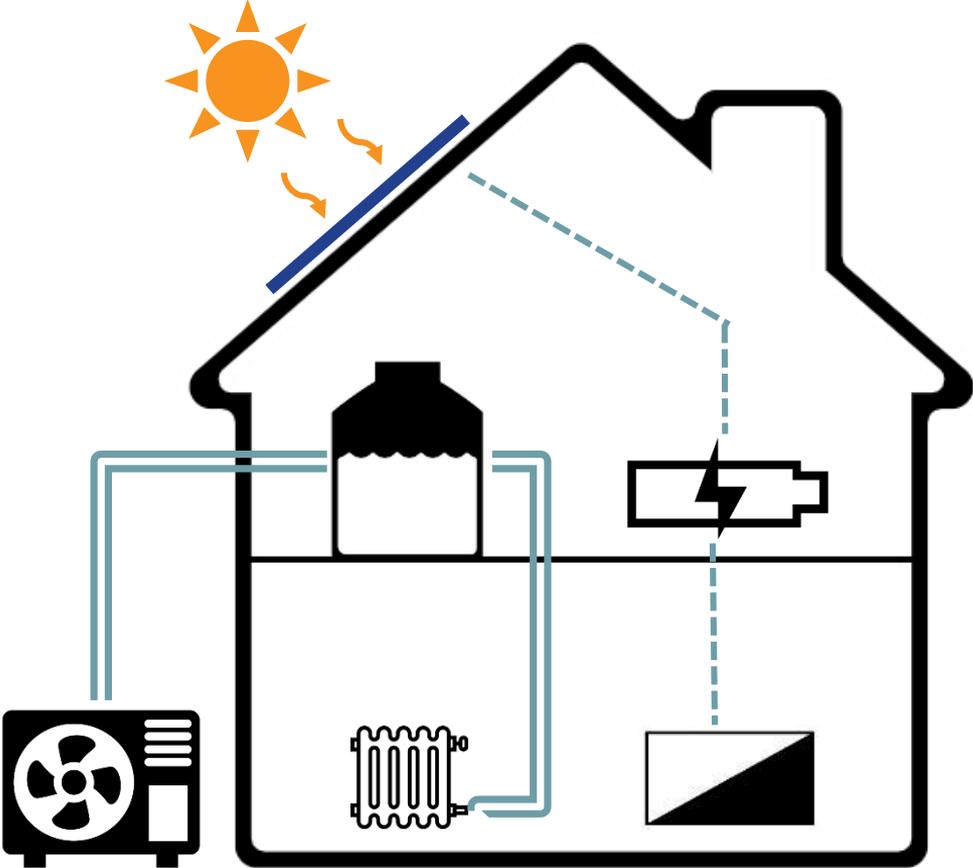


Elec



1kwp

FABRIC + ASHP + BATT



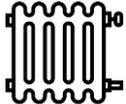
CO₂ %

47%

CO₂ %

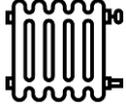
65%

SAP 12



Wet

SAP 10



Wet

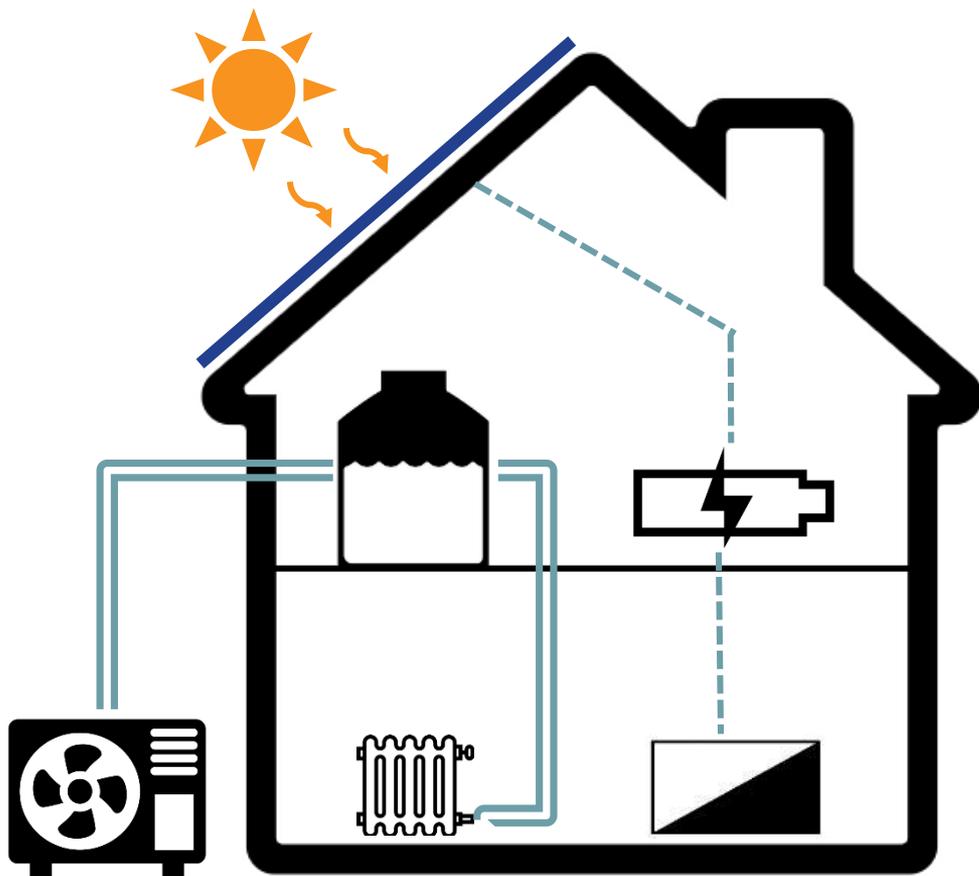


1kwp



1kwp

ZERO CARBON

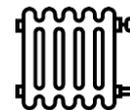


SAP 12



100%

100%



Wet

Elec



3.20kwp

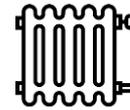
5.20kwp

SAP 10



100%

100%



Wet

Elec



3.20kwp

5.20kwp

THANK YOU FOR LISTENING

Tackling the Climate Emergency through Net-Zero Retrofit
Moat Homes & Engie Case Study
Jon Warren



5th AVE NYC

1900

Where is

the
car?



5th AVE NYC

1913

Where is

the

horse?



- > An old home that's better than a new home
- > Warm and comfortable every day
- > Affordable energy & maintenance – financed by guaranteed savings
- > Factory built, performs today and for 2050
- > Net zero energy, (nearly) zero emissions





THE ENERGIESPRONG PROMISE

21°c
ALL YEAR
ROUND

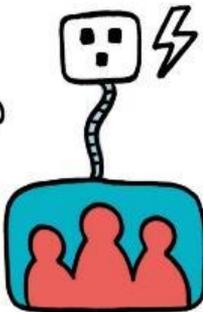


40
MINS
HOT WATER



180L
PER
DAY

ENERGY
PLUGLOAD



EQUAL TO
HOUSEHOLD
USAGE
REQUIREMENT

FEELS
GOOD

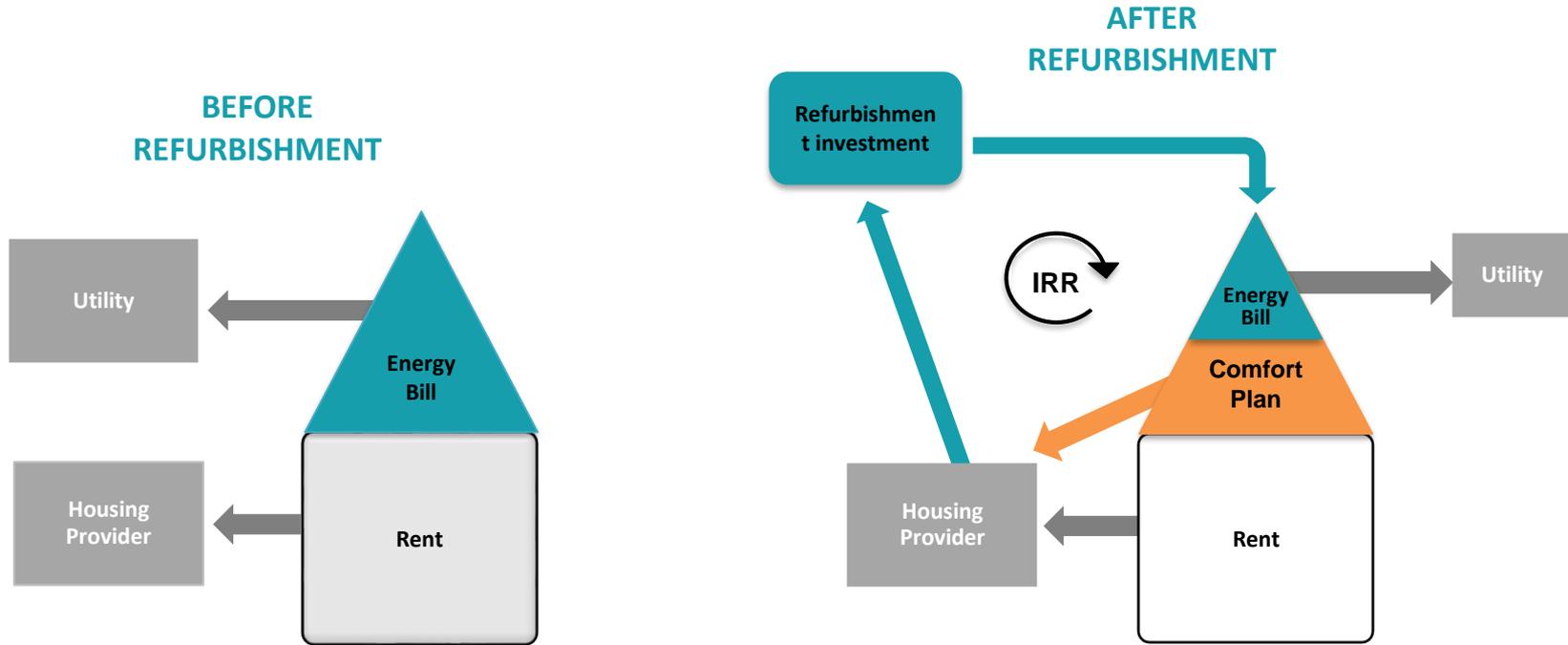


SOUNDS
GOOD

> easy to
understand
product with
guaranteed
outcomes

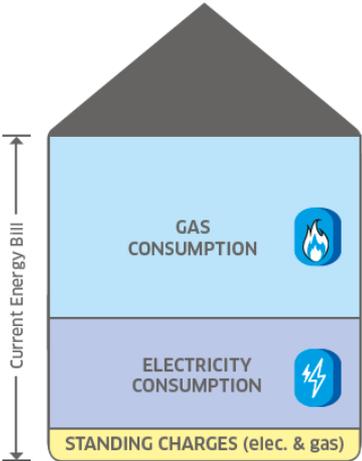


> Business Model

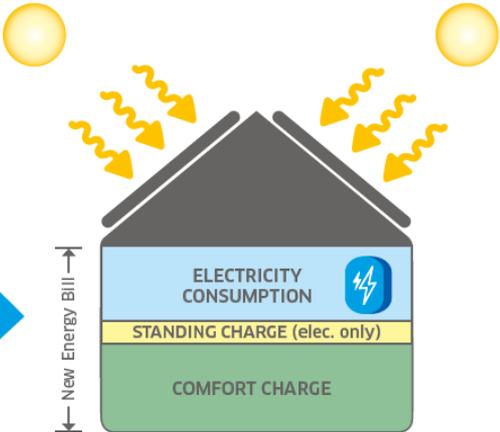


Moat EnergieSprong Pilots – Energy Bill Summary

Existing Mundon Road Home
(average energy bill of £130 per month)



EnergieSprong 2050 Home
(revised energy bill of £60 per month*)



*Average saving is estimated to be £840 per year





Stay in touch

Jon Warren

Market Development Team

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jon.warren@energiesprong.uk



*Energie
Sprong
uk*

Panel Q&A

Please field questions on the topic of...

“Tackling The Climate Emergency”





South East
Consortium

#SEC2019

GETTING YOU FUTURE READY

Old bricks, new tricks – tackling the retrofit challenge



John Milner - Partner, Baily Garner

Joe Jackson - Associate Partner, Baily Garner



Old Bricks, New Tricks – Tackling the Retrofit Challenge
SEC Conference 7 November 2019
John Milner and Joe Jackson, Baily Garner



Contents

- Climate and Ecological Emergency
- Retrofit – How we got here
- Each Home Counts
- PAS 2035
- Case Studies
- Questions and Answers



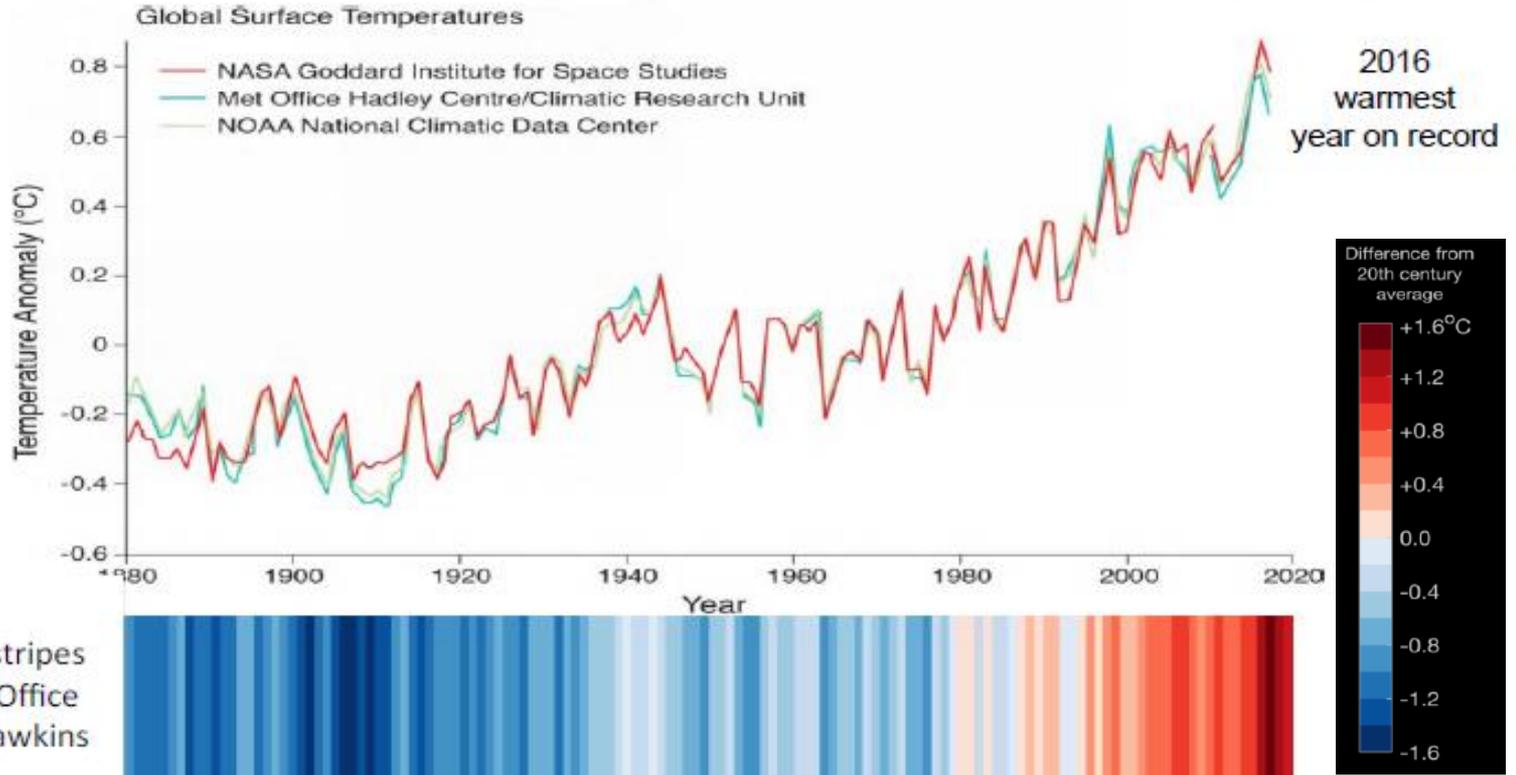
Climate and Ecological Emergency

An **emergency** is a situation that poses an immediate risk to health, life, property, or environment. Most emergencies require urgent intervention to prevent a worsening of the situation, although in some situations, mitigation may not be possible and agencies may only be able to offer palliative care for the aftermath.



Climate Emergency

Annual global temperatures (1880-2018)

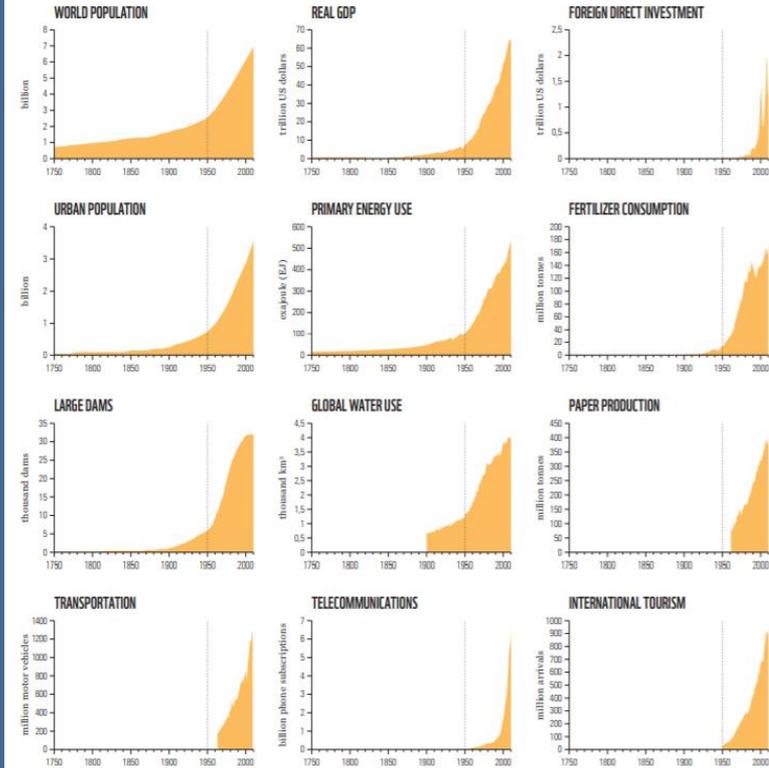


#warmingstripes
Date Met Office
From Ed Hawkins

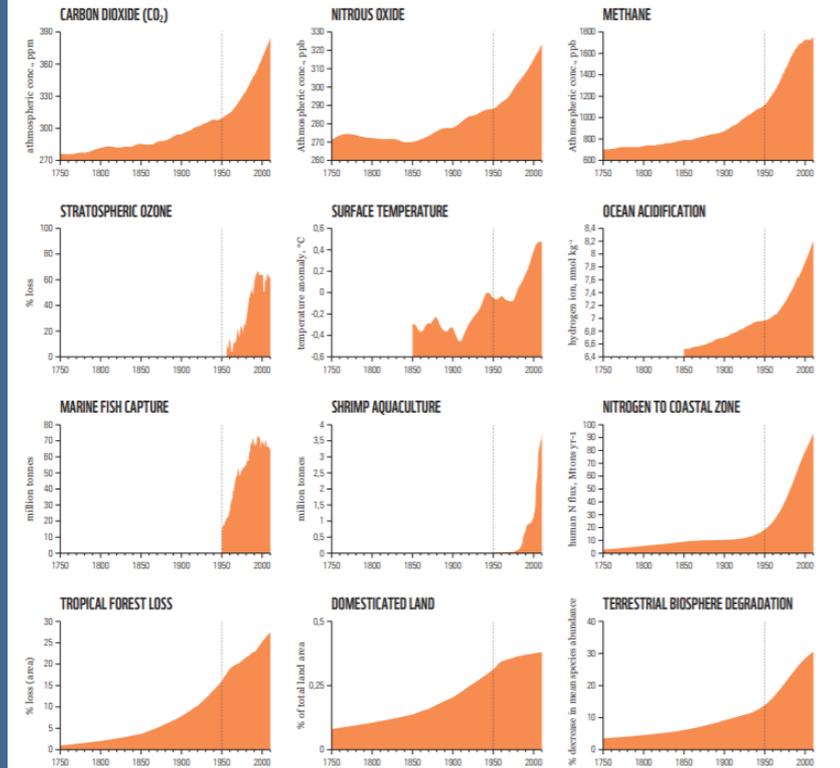


Ecological Emergency

SOCIO-ECONOMIC TRENDS

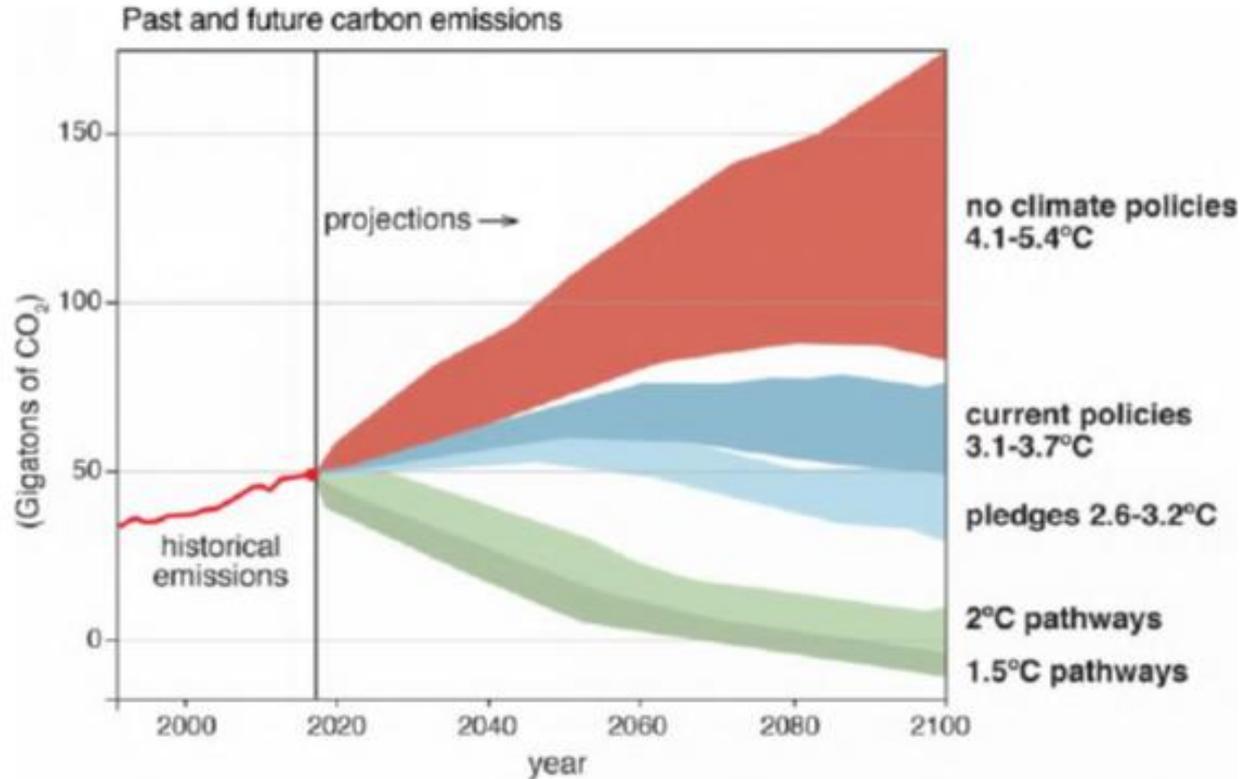


EARTH SYSTEM TRENDS



The Evidence and the future

Future warming depends on our choice of carbon emissions



For Refurbishment to play its part in Net Zero

- English Housing Survey 2017-18
- 24 Million Homes in total
 - 64% owner occupier 14.8m properties
 - 19% private sector rented 4.0m properties
 - 10% Housing Association 2.4m properties
 - 7% Local Authority 1.6m properties
- 1564 weeks between now and 2050
- 4m (HA & LA) homes \div 1564 = 2,557 homes per week
- Total Cost
 - Take your pick
 - Say average cost £25k
 - £63m per week
 - Circa £100 billion total



A Quick look at how we got here

Retrofit for the Future 2009-2014

- Expert review panel published data and report
- Few projects met target, typical retrofit cost £90K

The Green Deal

- Failed because of high interest rates, no promotion, under-funded assessments, no design, lack of trust
- Ministers' 'cowboy builders' paranoia led to PAS 2030

Energy Company Obligation (ECO)

- Measures based, installation compliant with PAS 2030

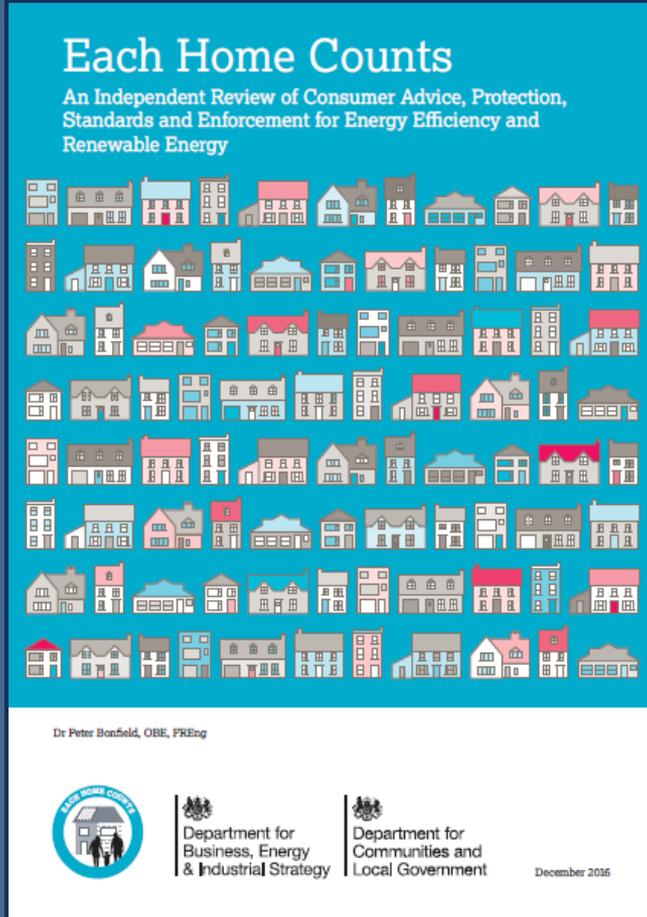
The Centre of Refurbishment Excellence (CoRE)

- First point of call for Each Home Counts review

RE:NEW, Sustainable Traditional Buildings Alliance, UK Centre for Moisture in Buildings



Each Home Counts



- **Followed Failure of Green Deal. Published in Dec 2016**
- **Industry-led review**
- **Twenty-seven recommendations**
- **Implementation by industry and BEIS**
- **Two strategic objectives**
 - Boost demand for energy efficiency from consumers and the public sector by restoring trust in the industry
 - Reduce risks to finance bodies to encourage funding
- **Establishes a framework to support the market**



TrustMark

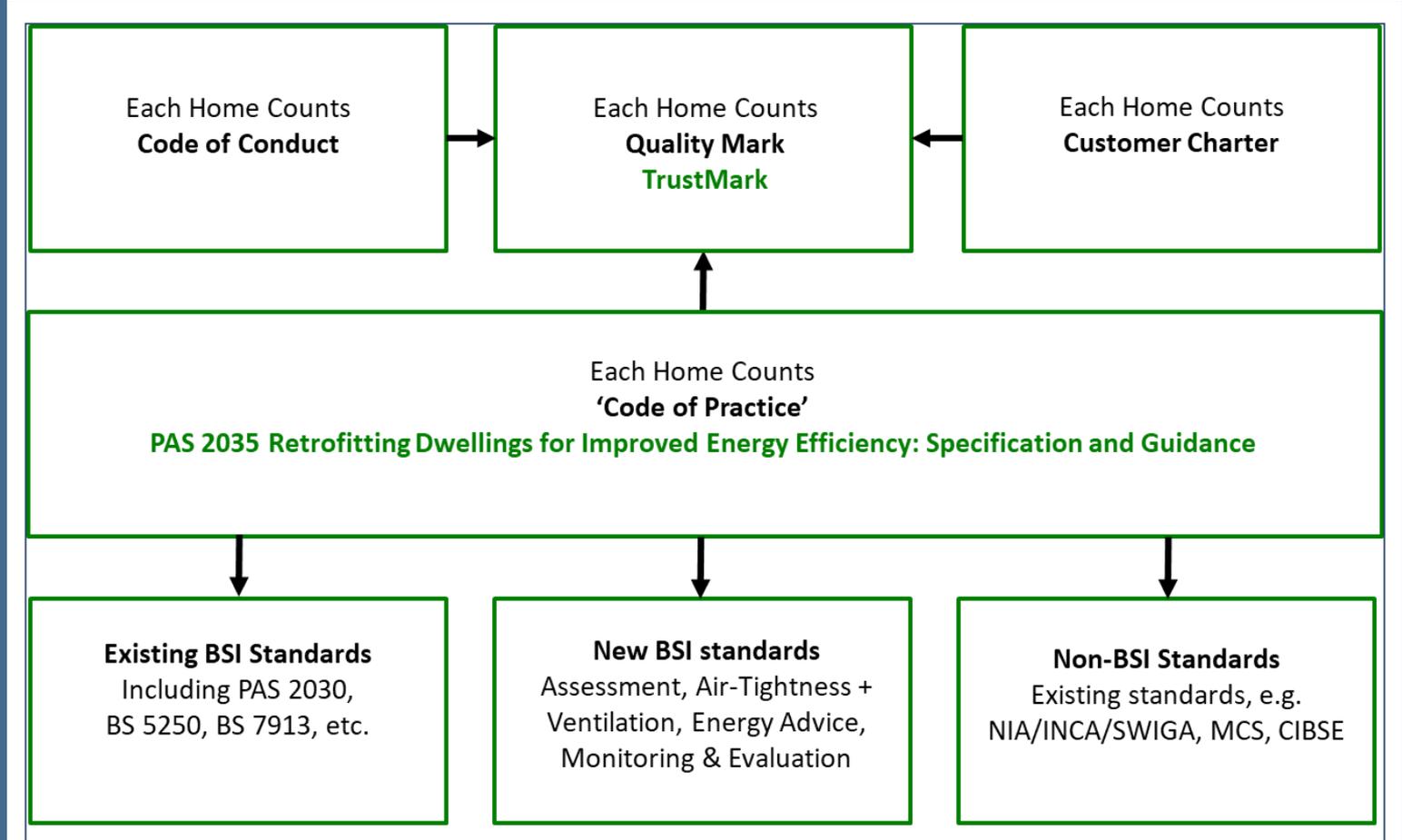


TRUSTMARK
Government Endorsed Quality

- Government owned and endorsed
- Adopted as the Each Home Counts Quality Mark
 - Working alongside MCS (for renewables)
- Retrofit members must adhere to
 - Customer Charter and Code of Conduct
- ECO installers must become members of TrustMark
 - Membership is via their Certification Bodies
- TrustMark and Ofgem require ECO installers to
 - Comply with PAS 2030: 2017 (now)
 - Comply with PAS 2035: 2019 (by January 2021)



BSI Retrofit Standards Framework



PAS 2035 – JUNE 2019

PAS 2035:2019

Retrofitting dwellings for improved energy efficiency –
Specification and guidance



 Department for
Business, Energy
& Industrial Strategy

bsi.

- Any domestic Retrofit - Not just Eco
- Used in conjunction with other standards including PAS 2030
- New Roles – Every project has a Retrofit Coordinator
- Whole house risk based approach
- Proposal for mandatory publically funded schemes compliance (Jan 2021?)

Key Points

- Five new roles including Retrofit Coordinator – Central role responsible for any project beginning to end, including claiming compliance with PAS 2035.
- Other roles for Retrofit Advisors, Assessors, Designers and Evaluators.
- The Retrofit Coordinator is required to establish the outcomes with the client and ensure an 'in depth assessment' starting point
- Level of qualifications required dependent upon assessed risk
- Level of assessed risk determines the path through the PAS 2035 process
- The risk assessed as A, B, C dependent on triage process and inputting information into a risk assessment template



Key Points

The five **risk** criteria are:-

- Number of dwellings to be improved
- Number of required per dwelling
- Measures proposed
- Combination of Measures
- Constraints of built form

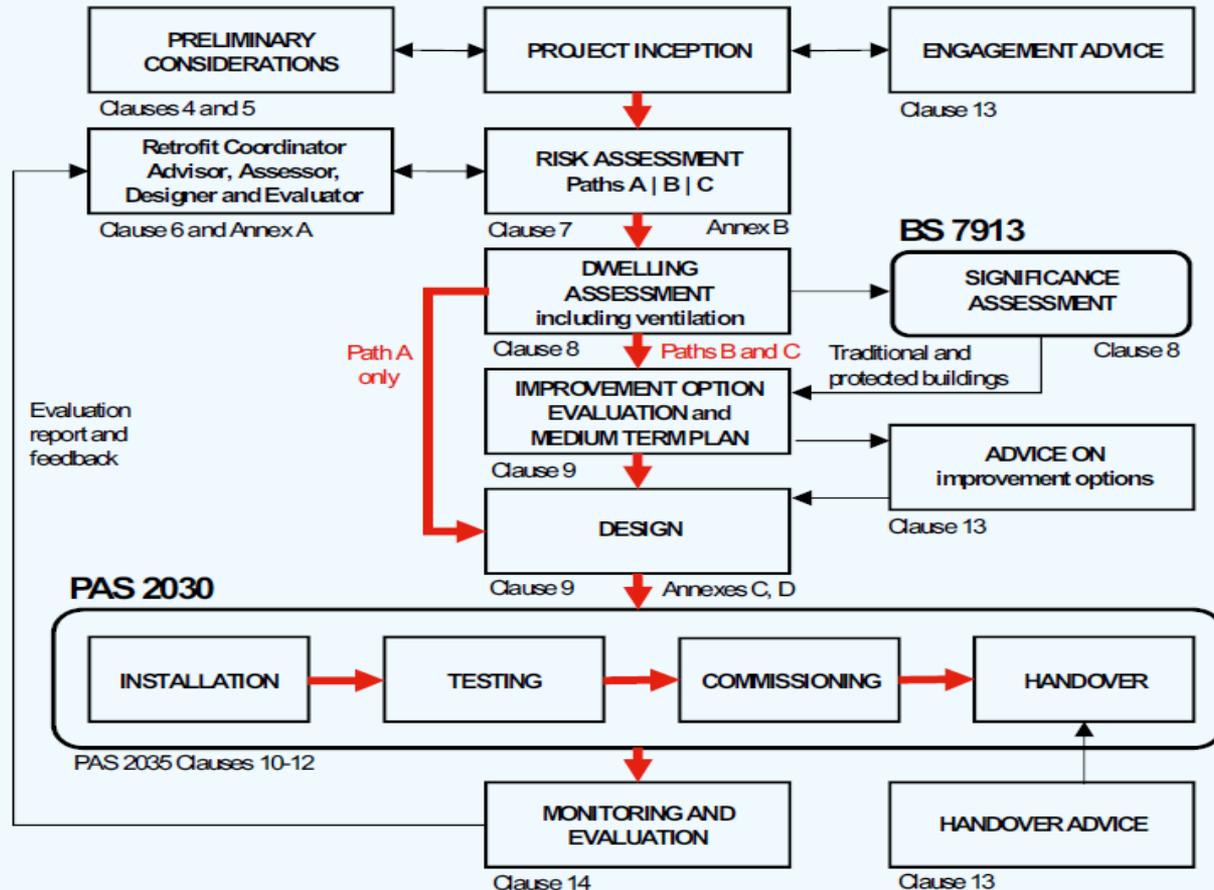
Path A – Simple Requirement which allows single measure installation by specialists

Path B and C - More onerous requiring an improvement option evaluation and a medium term improvement plan identifying a 20-30 year plan for improvement

Path C – Specification more onerous and requires specialist input



Overview of the PAS 2035 Retrofit Process



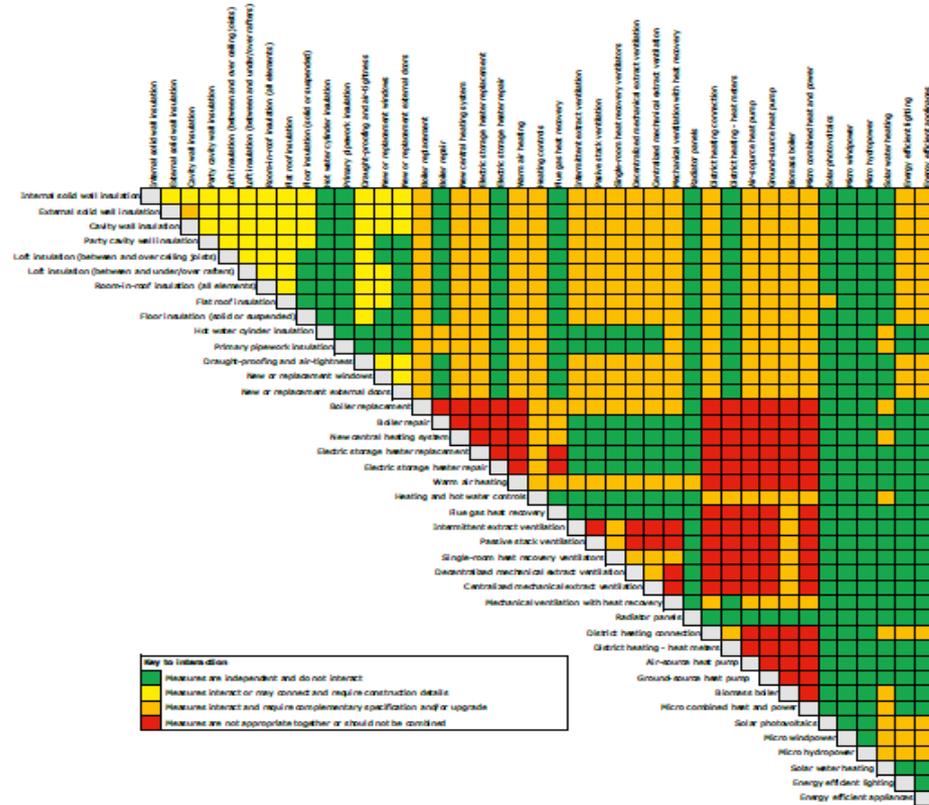
Key Points

- PAS 2035 – Appendix C deals with ventilation dealing with assessment of whether ventilation is inadequate and requires upgrade
- Design will depend upon risk but in every case must consider agreed outcomes
- Must Consider: planning and building regulations, moisture, interfaces, ventilation, testing commissioning etc
- Measures Interaction Matrix
 - Used in risk assessment (inherent and combined risks)
 - Identifies where retrofit design must consider interfaces
- Commissioning and handover – Soft landings
- Monitoring and evaluation
 - Confirms agreed outcomes, investigates discrepancies

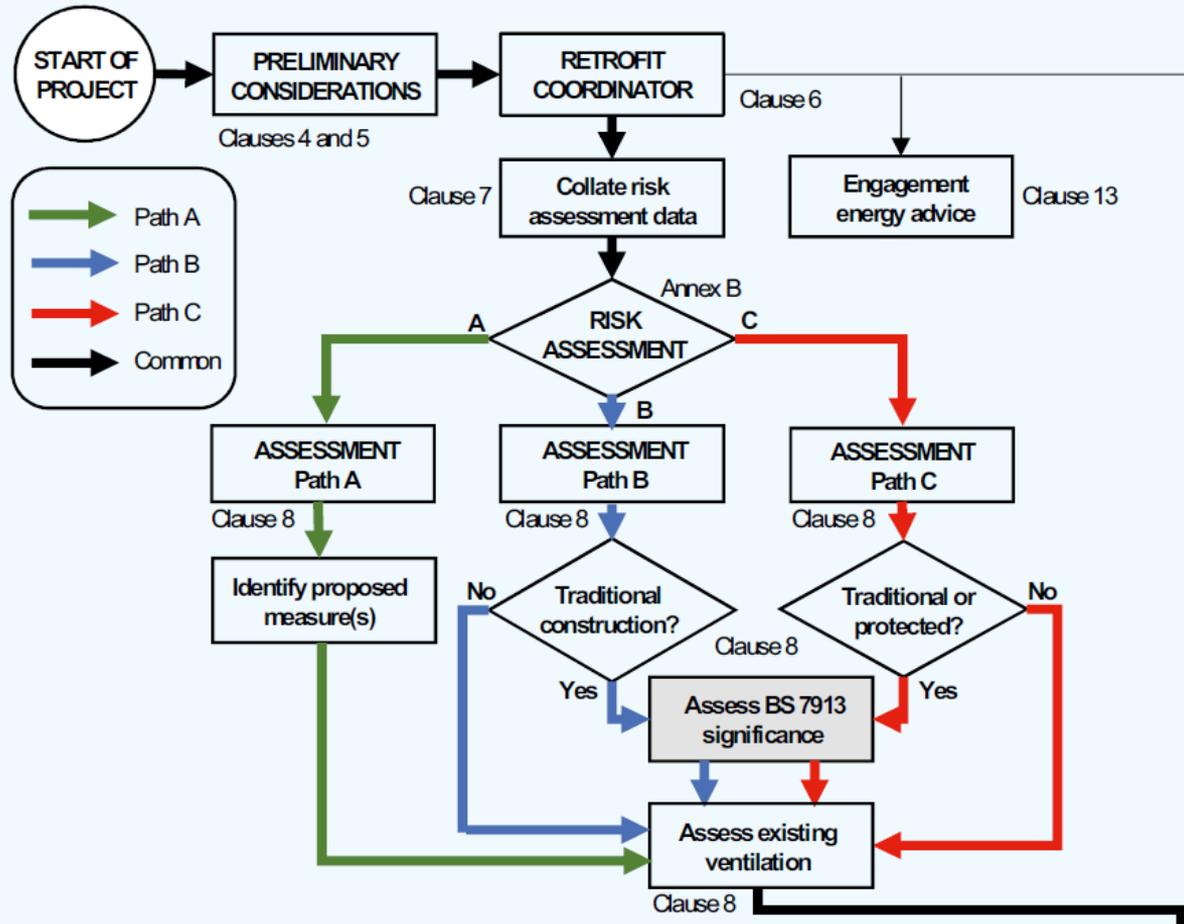


Measures Interaction Matrix

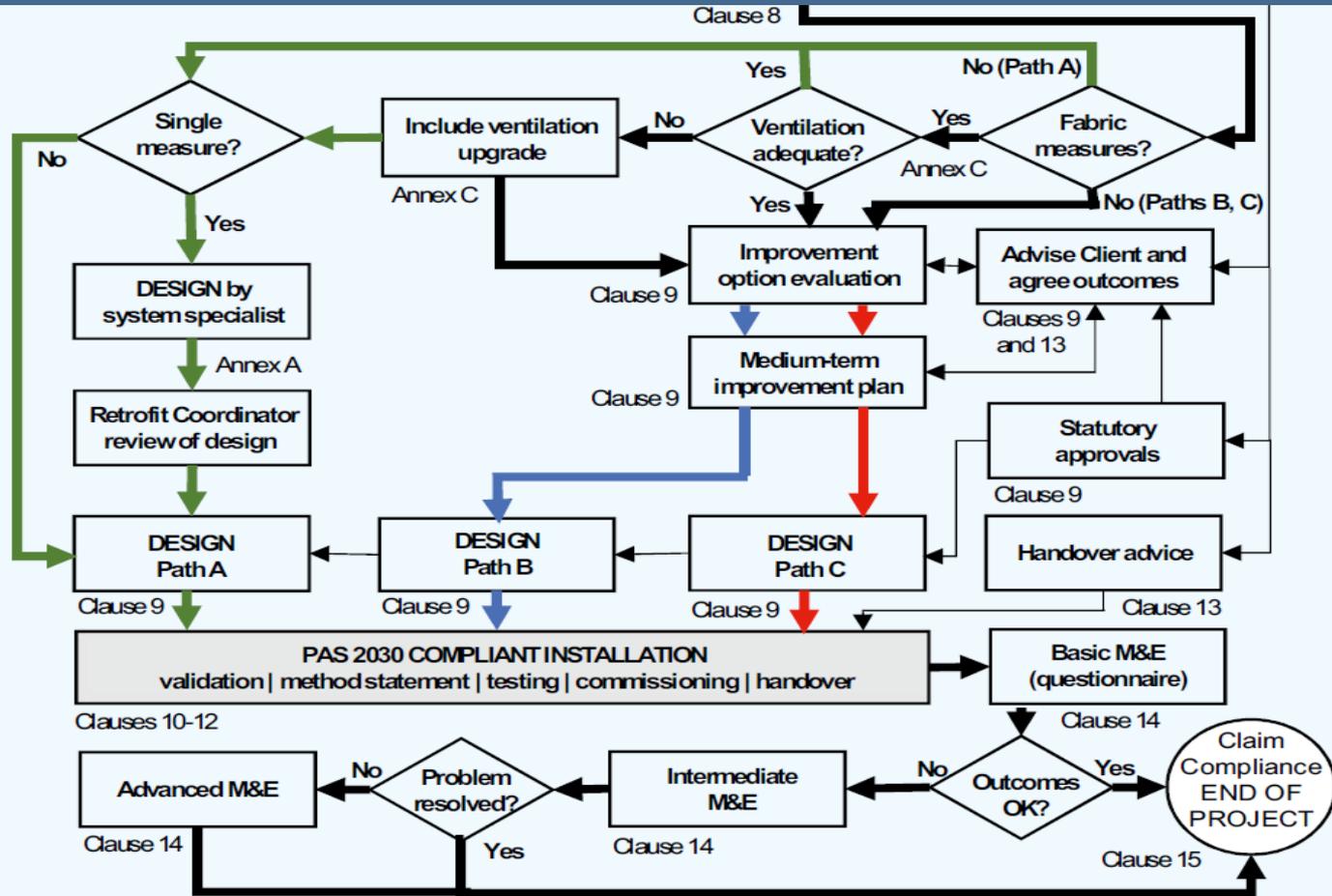
Figure D.1 – The measures interaction matrix



PAS 2035 Retrofit Process



PAS 2035 Retrofit Process



Some Conclusions

- The bigger but harder wins are in the private sector
- Trying to put right what went wrong with Green Deal
- Quality and Assurance is key and Government supports this
- Standard is thought to become mandatory for publically funded projects
- Process looks complex for some single measures eg boilers but.....
- New Homes Standard has promised an existing homes consultation due out shortly



Case Studies

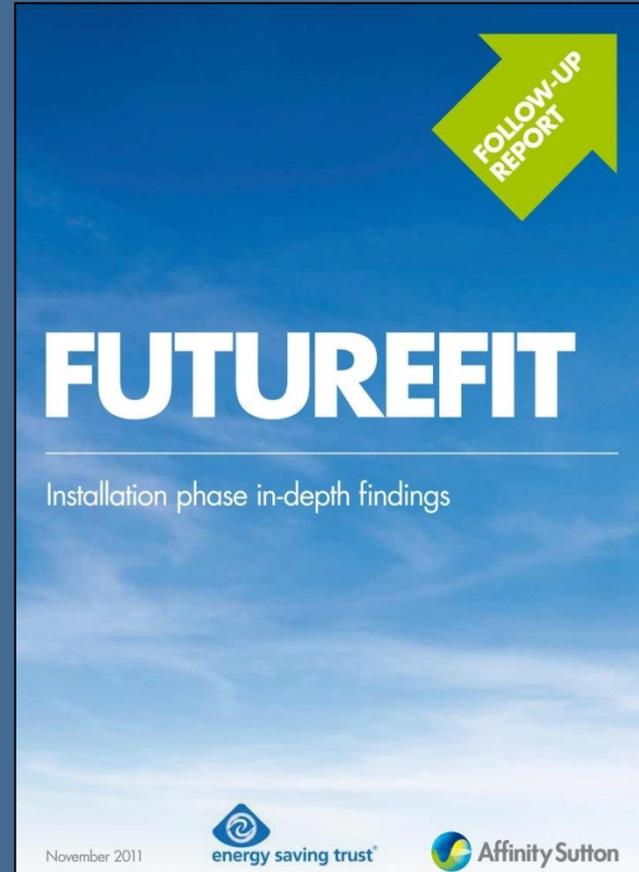
- Futurefit – Affinity Sutton
- Sutton Investment Options Appraisal
- Risks in Retrofit
- Energiesprong



energie
sprong
uk

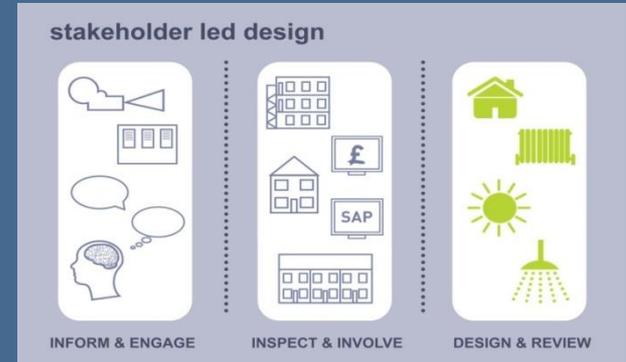


Futurefit – Affinity Sutton



Futurefit – Affinity Sutton

- Low Carbon Retrofit Programme
- 102 Properties
- Energy Efficiency Improvement & Carbon Emissions Reduction
- Project Budget £1.2m
- SAP Driven
- Stakeholder Driven
- Post Installation Monitoring
- Green Deal

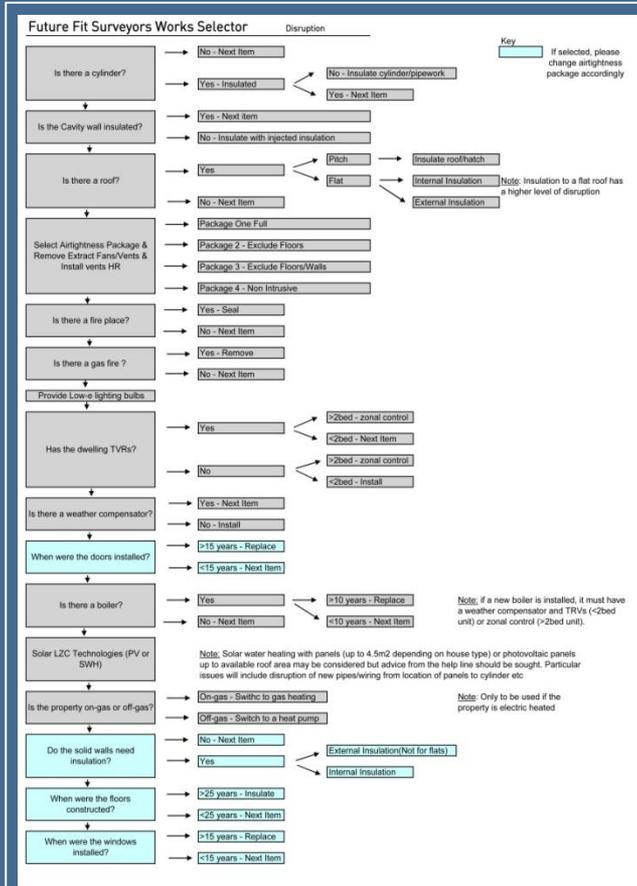


Futurefit - Archetype Selection

Property type	Built form	Wall Construction type	Pre 1900	1900-1929	1930-1949	1950-1966	1967-1975	1976-1982	1983-1990	1991-1995	1996-2002	2003-2006	2007 onwards	Unknown	Grand Total
Bungalow	Detached	Cavity			1	7	17	3	3	10	11	3		3	58
		Solid brick		1					3						4
	End-terrace	Cavity		1	1	130	49	51	15	4	9	2	6	22	290
		Timber frame										1			1
	Mid-terrace	Cavity			14	169	57	74	26	4	4	25		16	389
		System built				4									4
		Timber frame										1			1
	Semi-detached	Cavity		2	19	49	61	18	9	12	82	32	28	37	349
		Solid brick													1
	Flat	(blank)	Cavity		1297	1056	3403	1215	1639	657	422	893	594	977	651
Solid brick			5	101	56	263	23		3	11	23	4		29	518
Timber frame							4	16	2	30	4	2	9	7	74
House	Detached	Cavity		2	5	7	22	6	8	20	10	4	2	8	94
		Solid brick		27	3									4	34
	End-terrace	Cavity	6	1329	2285	1862	487	643	370	1193	1594	337	513	772	11391
		Solid brick	1	572	256	167	5	0	4	0	3	1	118	53	1180
		System built	0	0	180	50	17	0	0	0	0	0	1	0	248
		Timber frame	0	0	0	4	39	92	4	42	46	4	0	31	262
	Mid-terrace	Cavity	2	557	1797	1315	620	826	282	350	505	147	18	390	6809
		Solid brick	7	228	82	132	6		5		24		71		555
		Stone		1			1							1	3
		System built				19	16				8				43
Timber frame					15	107	253	20	8	2	6		61	472	
(blank)													1	1	
Maisonette	(blank)	Cavity		30	85	815	1090	515	52	9	29	37	10	96	2768
		Solid brick		82		17	110				5				214
		Timber frame					1					8		3	12
(blank)	(blank)	Cavity											3	3	
	(blank)	(blank)		3		1	8	4	7			5	215	3	246
Grand Total			21	4233	5840	8429	3955	4140	1370	2115	3253	1213	1974	2186	38729



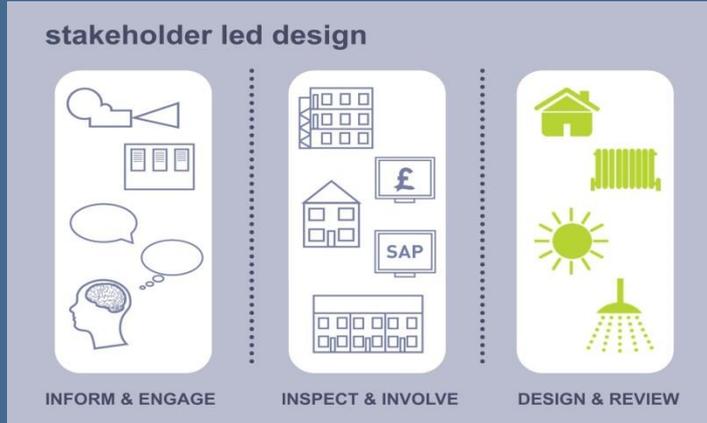
Futurefit - Works Selector



- Packages Designed to:
- Maximise carbon savings over lifetime
- Follow energy hierarchy
- Avoid decanting
- Achieve best value SAP/carbon/fuel improvements



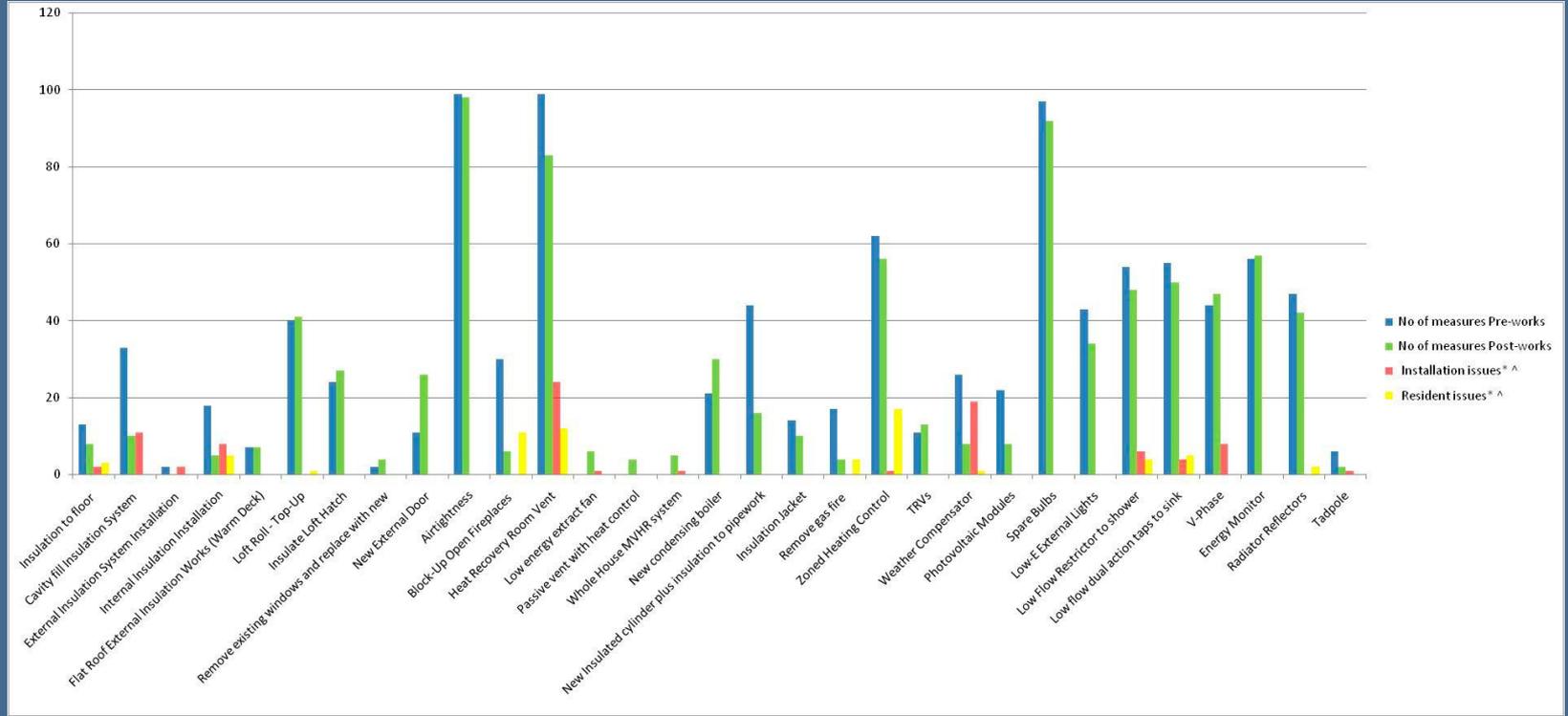
Futurefit – Stakeholder Led Design



- Residents
- ASG surveyors
- ASG supply chain
- ASG project manager
- Contractors' RLOs
- Stakeholder led design
- Energy Savings Trust

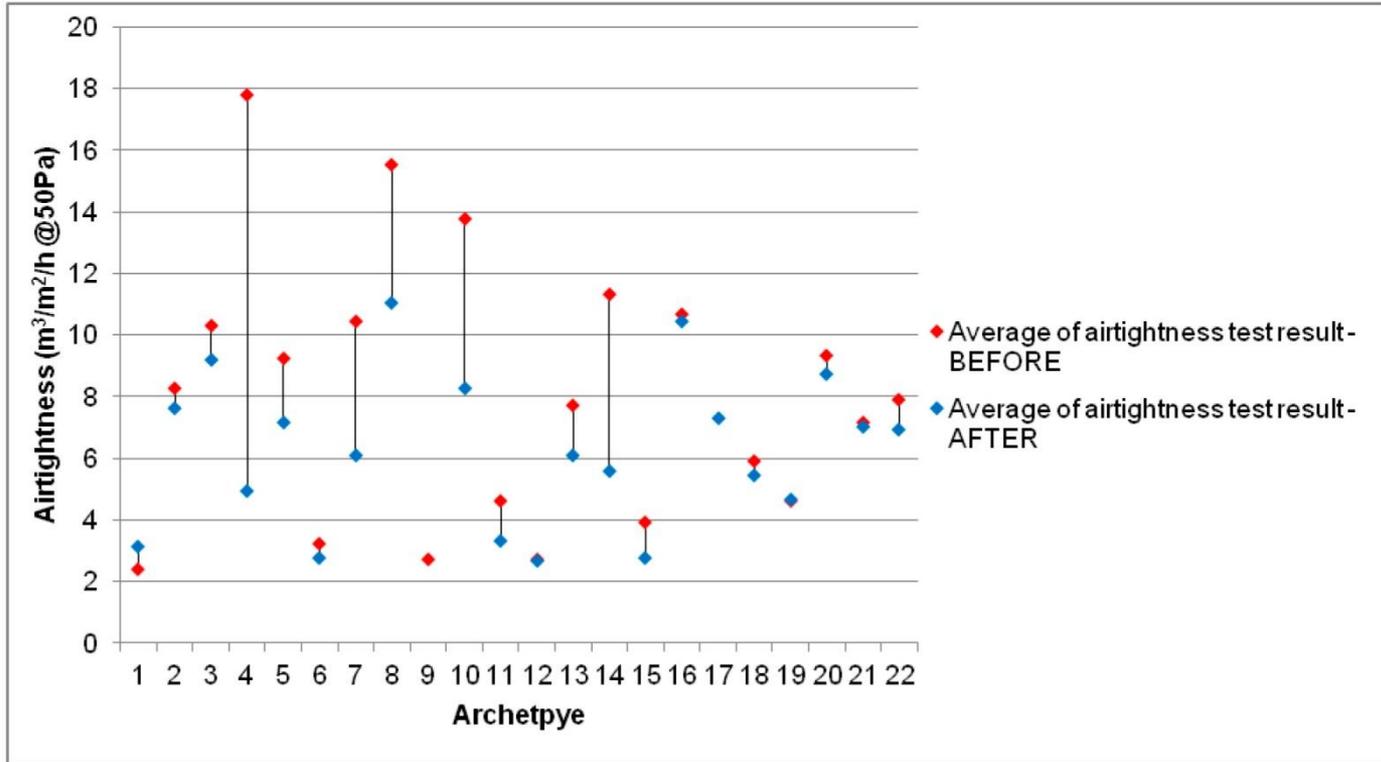


Futurefit – Installations and Issues



Futurefit – Air Tightness

Figure 6: Average fabric airtightness pre and post works



Futurefit – Findings



- SAP is imperfect
- Archetype/asset, management approach only goes so far
- Supply chain and client teams need support
- Stakeholder led design worked
- Some straight forward measures more difficult than thought
- Air tightness very variable and strategy required for measures and ventilation
- Costs increased over Energy Savings Trust model
- Ultimately the Golden Rule was not reached

Sutton Housing Partnership

- Investment Options Appraisal
- 66 Unity Homes of non-traditional construction
- Limited or restricted mortgage potential – ‘Right to Buy’ issue
- Notoriously difficult to upgrade



SHP – Stages of Intervention

- Just in Time / Reactive Maintenance Approach
- Planned Maintenance – Elemental Replacement and Repairs
- Regeneration / New Build to Current Regulations
- Whole House Approach – Modern Technologies



SHP – Surveying and Modelling

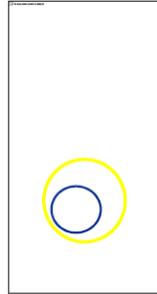


The results of E

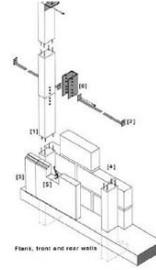
#	Variant	
1	Baseline	N
2	Traditional	E (
3	Trad +	E S
4	Electric	A
5	Electric +	A R
6	Electric +	A
7	Electric ++	A E
8	Energiesprong	E S R E
9	Energiesprong	E

(a)
(b)
(c)
(d)
(e)

7.7 Coulsdon Study A



Existing Schedule	
Type	A House
Proposed Schedule	
SITE AREA DENSITY	
Type	A 3 BED/5P House
TOTALS	
Car Parking Notes	
Parking Standard for Dweller	
3 Beds – provision of maximum	
Provision the maximum spaces	
Proposed Parking for Dweller	
100% for houses = 40 spaces	
*Note 1 'Buyback required'	



CONSTRUCTION
Substructure: Concrete strip footing. Concrete wall.
Frame: 150 x 150 'strong floor' PRC columns (S) with beams attached to base plate with mass concrete. Horizontal steel bracing (SB) between columns at first floor level. Mass concrete slab (S) between columns at column and adjacent columns, and in ground floor between columns on first and second floor.
External wall: 100 mm (S) cavity, PC blocks (S), cavity insulation (S).
Separating wall: 100 mm (S) cavity PC block cavity wall.
Partitions: cavity block masonry or concrete.
Ground floor: Floor Slabbing on columns.
First floor: 150 x 150 mm (S) beams on (S) floor joists. Beam fixed to column by (S) and (S).
Roof: Timber rafters connected to column heads with steel plates, asbestos cement sheets and concrete tiles.
Stairs: Not shown.

FINISHES
 Frame with full PRC corner columns. Cladding of external spaces or cladded. PRC columns, walls, or mullions. PRC columns, walls, or mullions. Cast in situ concrete window openings. Large in external wall of ground floor on order butters. PRC columns.

3.2.5 Typical Unity details



Cross section through columns

3.2.4 Unity House Type 2

Floors

The ground floor is of solid concrete construction having played timber insets to which is fixed T&G boarding. The first floor consist of suspended timber joists supported on steel beams and plates finished with T&G boarding

Roof

The roof is of timber framed pitched construction connected to the column heads with steel plates. The slopes are covered with interlocking concrete tiles with a lining of asbestos cement sheets.

Windows

Single glazed metal framed casements with pre cast concrete sill and head are fixed between the columns. For double width windows the columns are exposed as mullions.

Typical Defects associated with Unity Houses are:

- Longitudinal cracking of PRC columns
- Cracking and spalling of PRC lintels
- Corrosion of copper fixings to cladding
- Corrosion of Steelwork at interface between PRC columns and RSJ first floor beams
- Significant levels of chloride in PRC Panels
- Asbestos Cement roofing sheets



Bracing detail between columns



Corner bracing detail

Decarbonised heat scenario using a Hydrogen gas grid (illustration assumes +50% increase in cost compared with natural gas, H21 Consortium (2016) Leeds City Gate suggests 100% cost / kWh increase but with the opportunity for cost savings)

SHP – Risks of Single Measure Upgrades

- Lack of Ventilation
- Condensation Issues & Black Mould
- Cold Spots from Poorly Installed Cavity Insulation
- Penetrative Damp
- Roof Space Issues
- New Windows without Ventilation



SHP – New Build / Regeneration

Factor	Option 1 - Planned Maintenance incl. "just in time"	Score	Option 2 – Refurbishment & Cladding Improvements	Score	Option 3 – Demolition and Re-construction as existing	Score	Option 4 – New Build	Score
Financial	Moderate	4	Moderate	5	Negative	2	Negative	2
Political - Resident Objections	Moderate	5	Moderate	5	Negative	3	Negative	2
Planning and Statutory consents	Positive	8	Moderate	6	Negative	3	Negative	2
Resident Engagement / Consultation Process	Negative	3	Negative	3	Negative	3	Highly negative	1
Energy Performance	Highly negative	1	Positive	8	Highly positive	9	Highly positive	9
Time / Programme	Negative	3	Moderate	4	Negative	3	Negative	2
Legal	Positive	8	Positive	8	Negative	3	Highly negative	1
Technical Complexity	Negative	3	Negative	3	Negative	3	Positive	8
Disruption	Negative	2	Negative	2	Negative	3	Negative	2
Scores out of 90		37/90		44/90		36/90		29/90
Percentage		41%		49%		37%		32%



SHP – Whole House Approach



Energiesprong – A Whole House Approach



Energiesprong – A Whole House Approach



Energiesprong – A Whole House Approach

Realised to Date

- 17 UK
- 5,000 Netherlands
- 26 France
- 0 Germany
- 0 Italy

Planned

- 225 UK
- 14,400 Netherlands
- 6,550 France
- 105 Germany
- 5 Italy



Some Conclusions from Case Studies

- PAS 2035 aligns and supports the holistic approach
- Mandated Ventilation & Post Occupancy Checks are a must
- Whole house approach is preferable
- If funding is restricted, the assessment should be taken as a whole house approach and major elements upgraded
- There is not a 'Silver Bullet' approach to asset management
- Accurate and up to date stock data is key
- Resident lead design works in practice



Questions and Discussion





South East
Consortium

#SEC2019

GETTING YOU FUTURE READY

Plenary Session: Marathon running – lessons from the past for the future



Alistair McIntosh - CEO, HQN

Ian Doolittle - Partner, Trowers & Hamlins



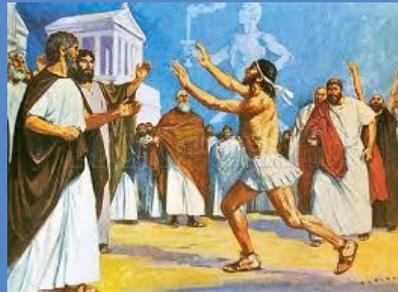
Presentation 7 November 2019

Marathon running for supermen and women – lessons from the past for the future

Alistair McIntosh and Ian Doolittle

Pioneering — Bahrain — Construction — Public sector — Energy — Real estate — London — Tax — IT — Dubai — Manchester — Connecting — Knowledge — Pragmatic — Malaysia — Exeter — Thought leadership — Housing — Agile — Creative — Connecting — Private equity — Local government — Manchester — Environment — Focused — Islamic finance — Projects — Abu Dhabi — Corporate finance — Passionate — Team v — Employment — Regulation — Procurement — Expertise — Specialist — Planning — Investment — Committed — Delivery — IT — Governance — IP — Corporate — Infrastructure — Value — Development — Private wealth — Oman — Governance — Birmingham — Corporate finance — Dynamic — Pensions — Dispute resolution — Insight — Banking and finance — Arbitration — Diverse — Regeneration — Care — Communication

Like today's marathons the first one
was a good news story –
except for poor Pheidippides!



1 : 59 : 40 – standards are rising all the time

- Anticipate the challenge
- Accept it – there's no point in complaining about KPIs
- The post-Grenfell Green Paper shifts the balance
- It's about consistency – and world-class colleagues



NB no other Kipchoges are available

Rising to the challenge – basic training tips

- Politicians can be fickle and politics short-term but there are trends to follow
- You can therefore build fitness (for purpose) over time
- The basics don't change – quality will win through



NB Other torture machines are available

A race to the bottom ...?

- Suicidal bidding leads to suicide – which is bad for the sector (and not nice for the deceased)
- Oppressive procurement leads to suicide bidding (q.v.)
- Popularity is cheap – and unprofitable
- Remain confident – even when leaseholders kick off



NB other absurd costumes are available

Running isn't football – there's no VAR (yet)

- Regulation is expanding – for Councils as well as RPs
- But people still matter more than rules
- Boards govern, tenants challenge - and you deliver!
- 'Mindful Compliance' works, mindless coercion doesn't



NB other teams are available – thank heaven

Cutting corners – or switching runners - isn't worth it

- Clients, especially public sector clients, are cautious and have deep pockets
- It's not worth fighting to enforce the small print caveats - and that's a lawyer's view
- And, as they say, word gets about



NB other hairstyles are now available

Are you all running for charity?

- Yes, given that it's all about social housing
- But it's tough love
- Without a surplus or a profit runners drop out
- That reduces competition and choice



Shelter The housing and homelessness charity

NB other charities are available

Understanding where (or what) the finishing line is

- It's tenant satisfaction...
- Delivered at a sustainable cost
- Sustainable for all involved



NB other sponsors are available

And if despite all this sage advice it all goes wrong?

- Don't worry
- Pheidippides apparently died with a smile on his face



NB other (younger) speakers are available

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NB other consultants are available

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