

# Building the Case for Change for the Future of Housing

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Stewart Milne Group



# Digital House Building

Design, Construction and Sales – The Digital Business Case

Autodesk University  
Tobacco Docks London 19<sup>th</sup> June



Stewart Dalgarno – Director of Product Development SMG

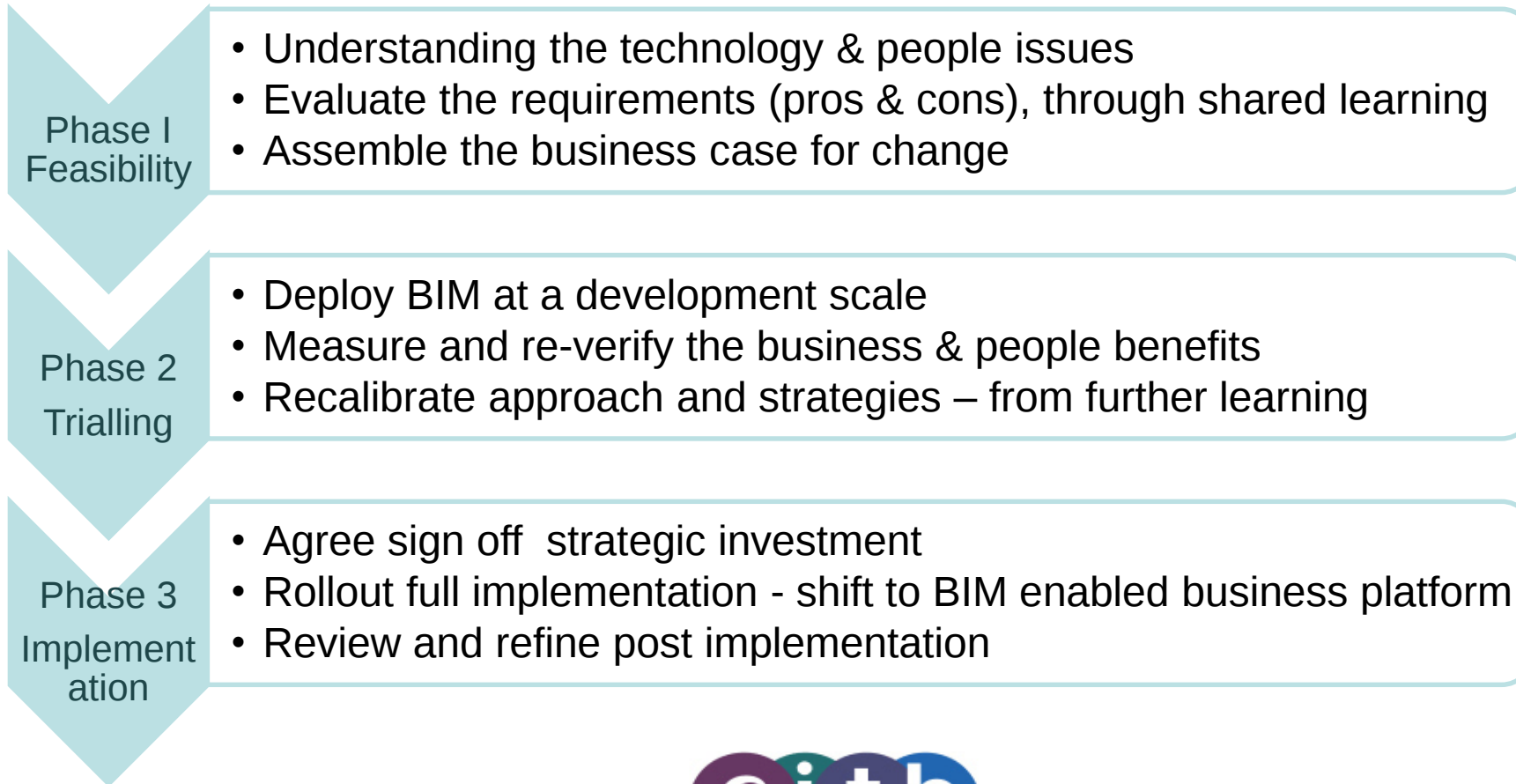
# Digital House Building - why?



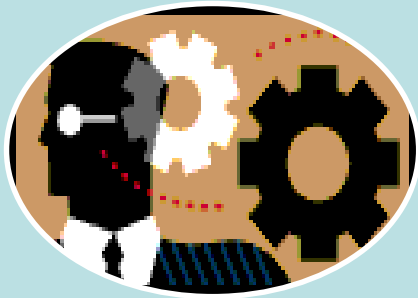
- Top 20 medium sized, 5 star house builder
- 1,000 homes per year, in 3 locations
- UK Largest Offsite Timber Frame Supplier
- OSM Capacity 14,000 per year



# Digital Strategy – Pilot Study



# Pilot Objectives



Technical -  
BIM Modelling &  
Supply Chain  
Components



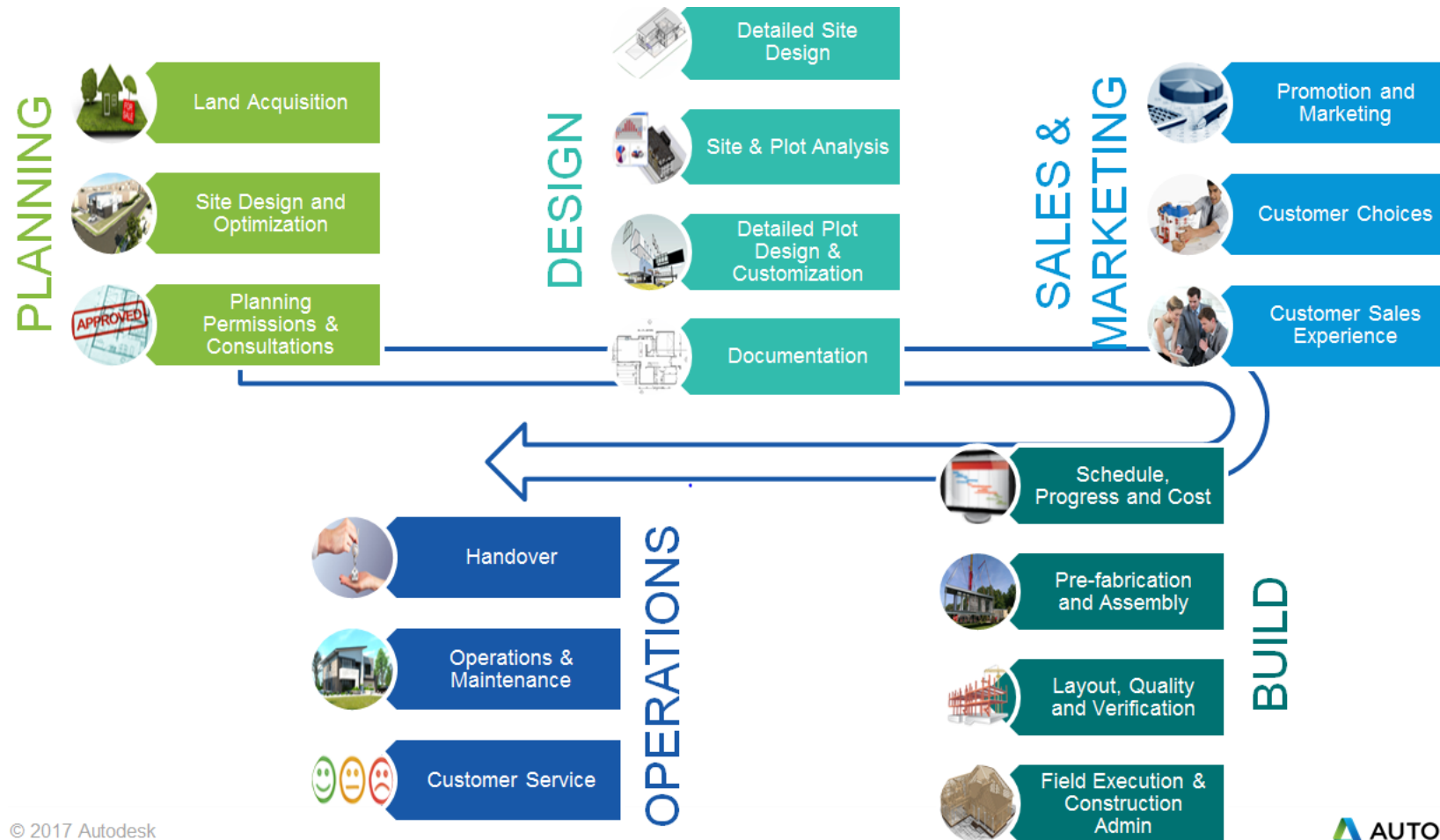
ICT Systems -  
Hard & Software



People – Skills,  
Behaviours &  
Cultures

**Business Case for Change**

# Digital Work Flows & Applications

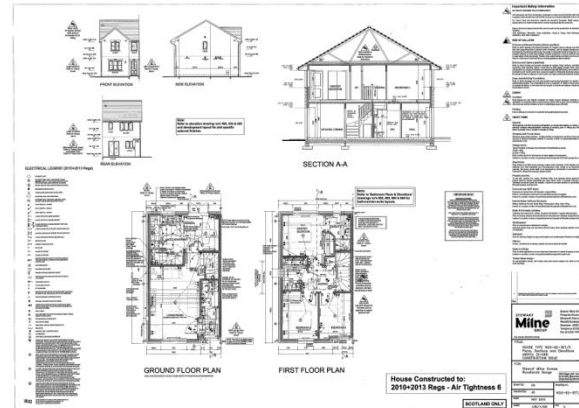


## The Business Case for Digital

- Digital working has potential for £3,500 saving per plot
- Savings could be £3m per year
- Digital working will fuel business growth, through a new more productive way
- There are many less tangible benefits – brand, value, consumer, productivity, safety
- Digital working will be the new norm
- SMG is well positioned to exploit digital - integrated, OSM orientated, pattern book & agile

# 2D to 3D Digital Information

- Digital Component & System Libraries
- Digital Housing models
- Digital Development Designs



2D “Dumb”  
paper based  
drawings,  
schedules &  
specifications



3D “Intelligent”  
Digital Model,  
with embedded  
information

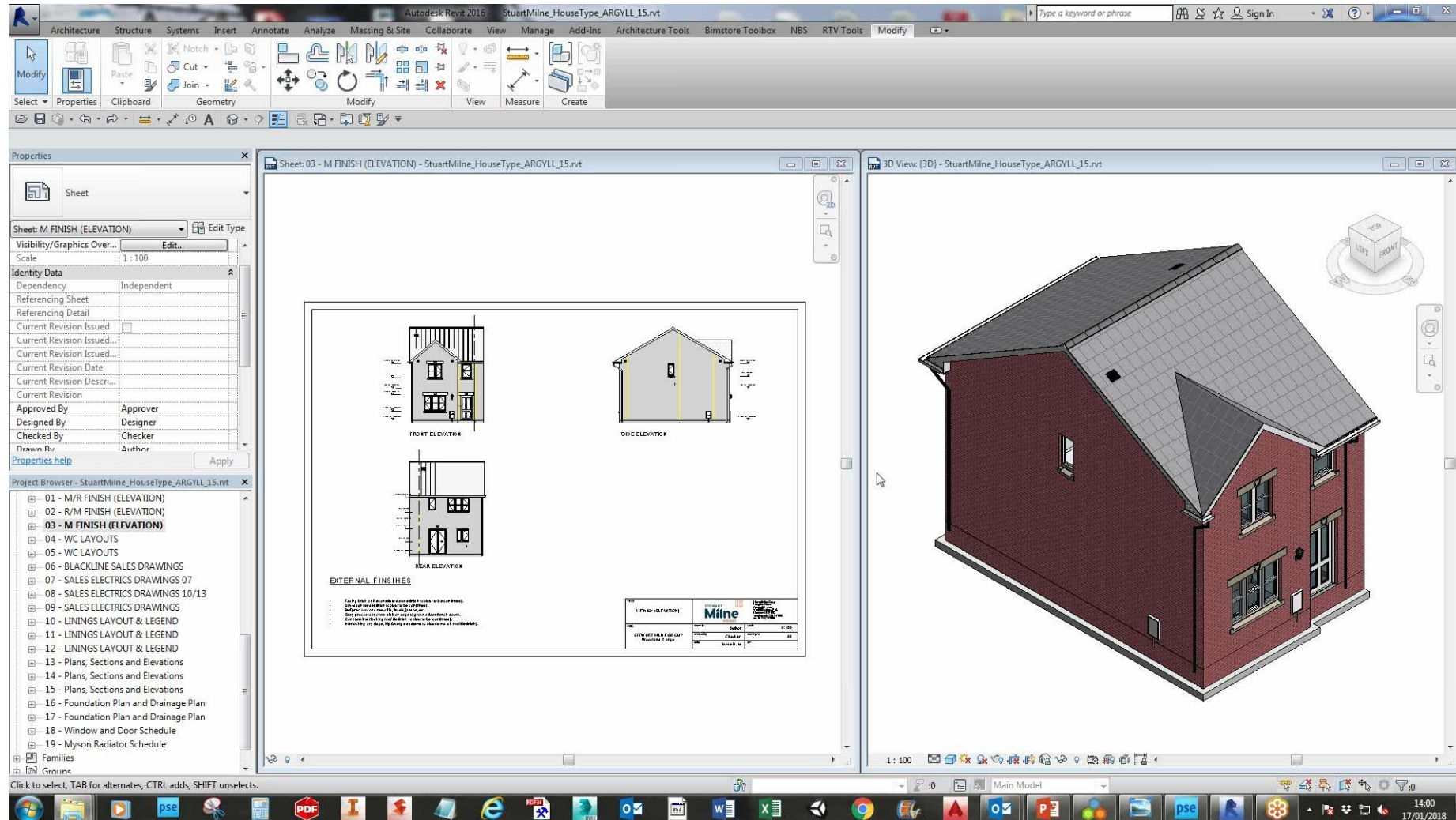
# OSM Shell - Digitally Integrated & Configurable



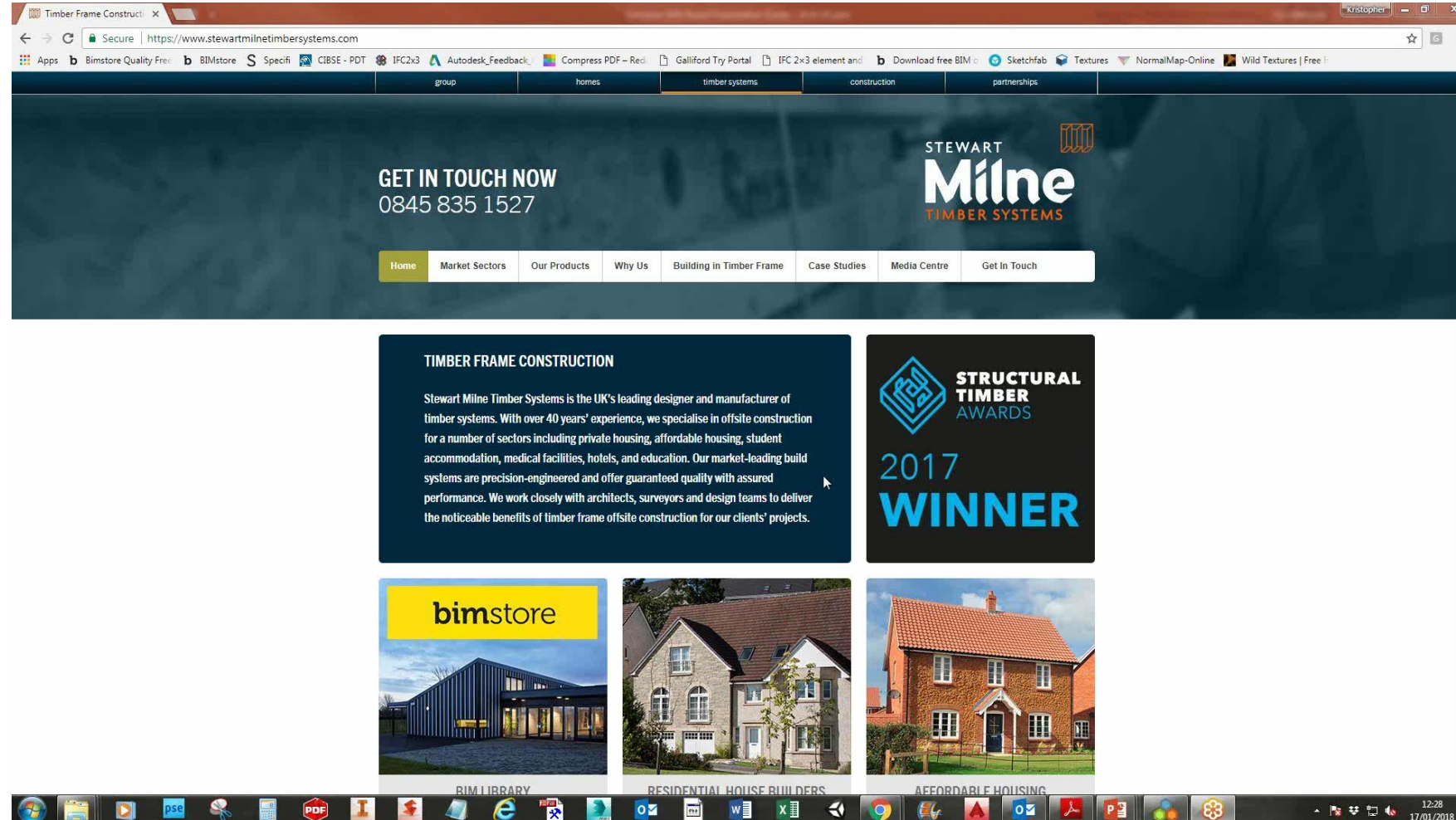
**Design, make, ship and erect  
a structural shell, with  
finished floors, fully insulated,  
weather tight , fire safe &  
secure in one visit, with  
primary services runs  
accommodated.**

**Elevated to suit location &  
internally fitted out to suit  
customer**

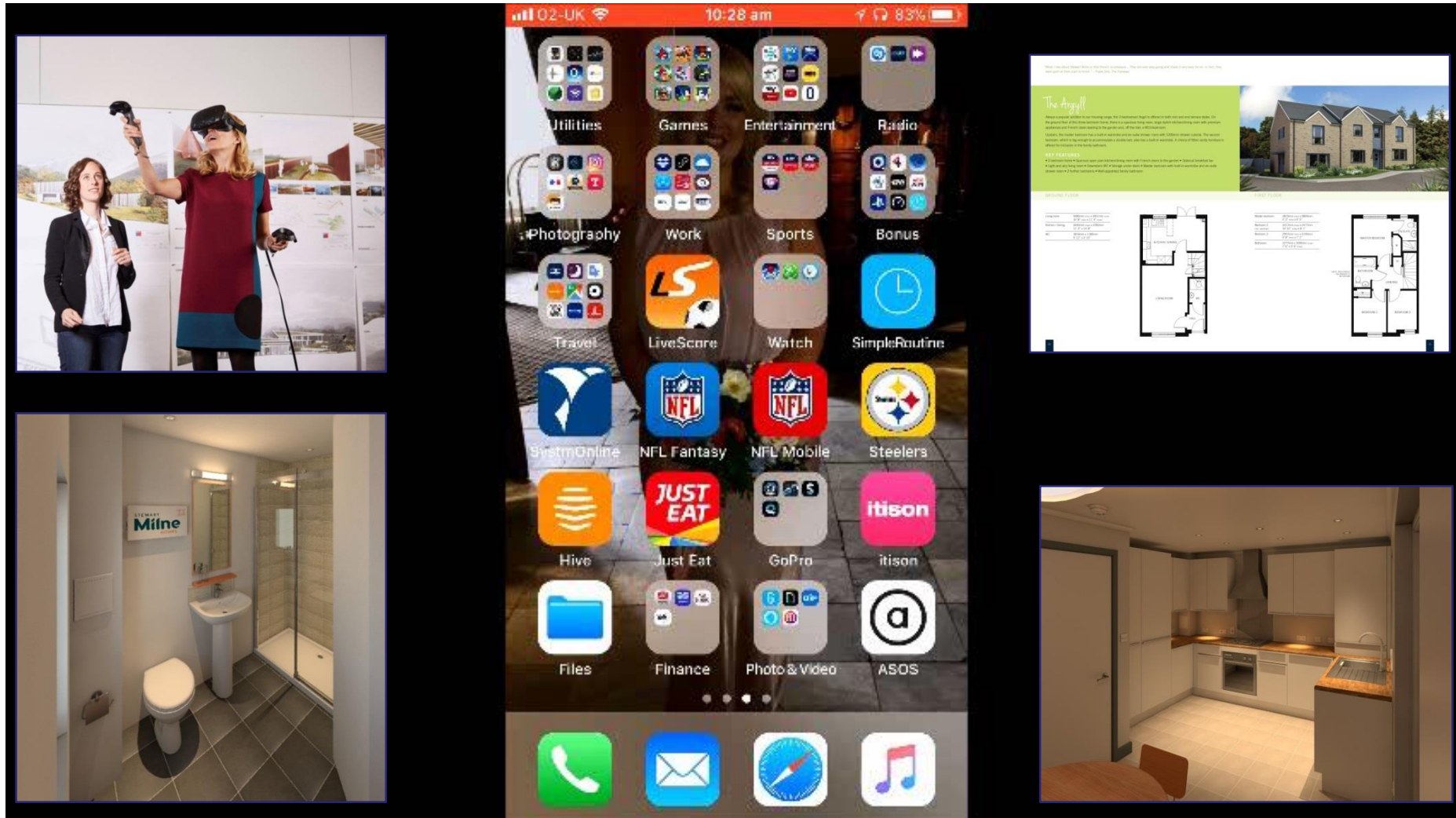
# Digital Housing Models - Elevations



# Digital Timber Frame Library



# Digital Customer Experience



# Digital Design & Place-making

- 1 x 3D Development Model
- Interactive Design Process
- Share & Collaborate
- Real Time Design
- Visually Engaged & Communication
- Access anywhere



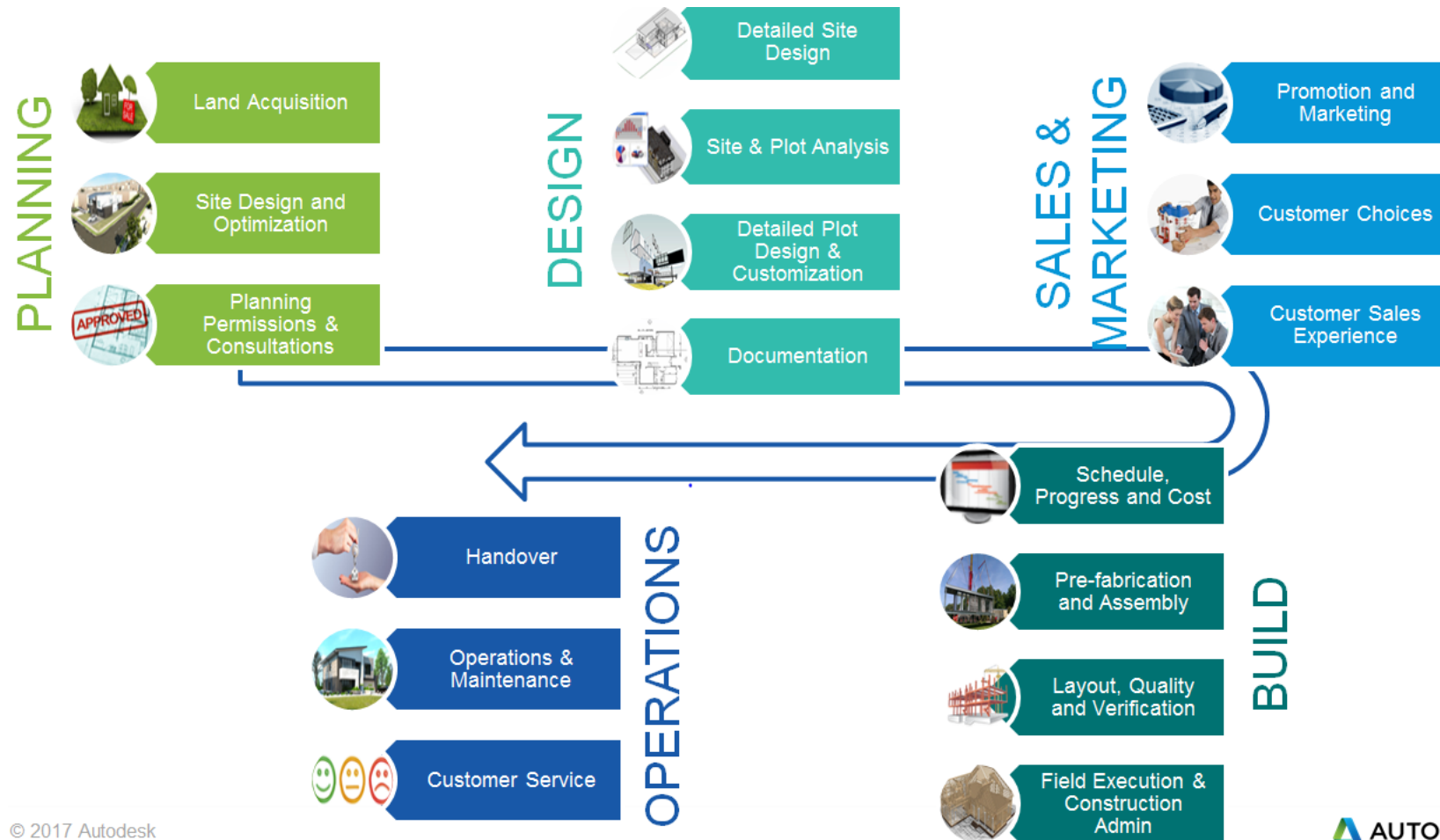
# Digital Design & Place-making

- Fast & Cost Effective
- Design Quality
- Visually Engaged
- Planning & Consultations
- Build Routes
- Customer Experience
- Sales off Plan





# Digital Business Case



# ROI – Where will it come from?



Land & Planning – Abnormal Costs, Public Consultations & Permissions



Design – Product Differentiation, RFI's and People Output



Build – Clash Prevention, Defects & Predictability



Sales & Marketing – Sales Rate & Marketing Material



Customer Care – Enhanced customer experience pre and post handover & digital service agreement

# ROI – Business Case “£’s”

| Planning                                                                                                                                                                                                                                                                                           | Design                                                                                                                                                                                                                                                      | Sales                                                                                                                                                                                                                                                                                                                                               | Construction                                                                                                                                                                                                                                                                                                                                             | Customer Care                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                   |                                                                                                                                                                           |                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                          |
| <ul style="list-style-type: none"><li>• Reduce planning cycle by 30%</li><li>• 50% increase in the likelihood of securing planning</li><li>• 25% increased support for community consultations</li><li>• 100% sites consented in Y1</li><li>• £600/plot saving in cost securing planning</li></ul> | <ul style="list-style-type: none"><li>• £500/plot saving in abnormal costs through 3D land design</li><li>• 30% reduction in site architectural design time</li><li>• 35% productivity gain for technical users</li><li>• £300/plot saving in RFI</li></ul> | <ul style="list-style-type: none"><li>• £250/plot saving in marketing costs</li><li>• 20% increase in sales rates 0.84/week to 1.1/week</li><li>• £600/plot saving in development finance costs</li><li>• Move towards a build to order business model</li><li>• £500/plot premium for early sales interaction &amp; home personalization</li></ul> | <ul style="list-style-type: none"><li>• £250/plot saving in defects and snagging</li><li>• 20% increase in handovers on time</li><li>• £350/plot saving in cost of missed handovers &amp; NHBC resolutions</li><li>• £150/plot saving in reworks and making good, due to early clash detection</li><li>• 30% improvement in safety performance</li></ul> | <ul style="list-style-type: none"><li>• 30% increase in recommendations and referrals, retention of 5 *</li><li>• OTIF handovers &amp; digital move in packs &amp; aftercare</li><li>• Higher likelihood of customers buying off plan</li><li>• Brand differentiation due to visualization and potential personalization</li><li>• Potential for early deposits, easing cash flow</li></ul> |

## The Business Case for Digital

- Digital working could save £3,500 per plot, £3m per year
- Digital working will fuel business growth, through a new digital way
- Many wider benefits – brand, value, consumer, productivity, safety
- Digital will drive integration & collaboration, with a shift to OSM
- Digital working will be the new norm



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