BIM in Housing

Integrating Supply Chain for Better Housing

Bobby Chakravarthy & Richard Whittaker
Who we are ...

Nottingham City Homes

• Arms Length Management Organisation of Nottingham City Council.
• 29,000 tenancies, 1,000 leaseholders, over 1,000 employees
• £65 -£80 million investment in new homes across Nottingham
• Biggest council house building programme for a generation
• Ongoing 600 + new built programme
• Replacing inefficient, uneconomic housing with high quality, efficient homes

Arcus Consulting

• Multi disciplinary Award winning National Practice
• Involved with 35 stock transfers delivering £500 million decent homes works on 500,000 dwellings.
• Experience working on 32 housing frameworks
• Winner “Consultant of the Year Award 2013”
• Winner “Sunday Times Top 100 Companies 2013”
Why Do it?

Building A Better Nottingham
BIMP Meadows, Nottingham

- Ground breaking project
- HCA support
- BIM task group
- Legislation in 2016
BIMP Intentions - Meadows, Nottingham

Two sites – One constructor partner

- Meadows – BIMP – Modern Methods of Construction
- Cranwell – Traditional construction methods

NEC3 form of contract

- Option C target contract with activity schedule
- Target cost
- Risk register up front
- Early warning

Opportunities

- Compare apples with apples
- Lessons learnt
- Inform & Influence
Why BIM?

BIM Principles

No one knows as much as everyone.
Objectives

Pre-Contract

• Typical Housing Scheme
• 65% reduction in post contract changes
• Standard Construction Type
• Detailed review at key RIBA stages
Objectives

Post -Contract

- 20% reduction in construction waste
- 20% reduction in defects
- Asset data is user friendly format
- Detailed review at every RIBA Stage
- Future proofing Asset information
- Product Excellence + Process Excellence
The Site  Meadows, Nottingham
The Site  Meadows, Nottingham

Site A

54 TOTAL UNITS (Site A-B-C)
Which BIM?

- 6D Building Information Modelling
- Level 2 BIM (government target)
- Multiple Model
- Multiple Software's – Open Platform

DRAWN

WRITTEN

TABULATED

ASSOCIATED DOCUMENTS
Undertake Capabilities Review
- Identify key staff for the project
- Assess internal process for BIM delivery
- Hardware, Software etc

Plug any Gaps
- Training staff/refreshers
- Streamline process for BIM delivery
- Working with new design teams
Planning - Define

- Programme Constrains
- Team structure and Competence
- Agreeing scope of services and delivery
- Process and Procedures

- Setting up Communication Plan
- Risk Register and Plan B
- Budget Constrains
- Identifying other Stakeholders
Planning - Define

Processes and Procedures

- NCH Employers Requirements
- BIM Execution Plan
- BIM Protocols
- BIM Coordination

- BIM Procurement Procedures
- Agreeing Software and Hardware Parameters
- Programme and Budget Constrains
Construction Project Information Exchange (CPIX)
All documents for exchange of information are prepared using the rules of CPIX.

Project Implementation Plan (PIP)
This is submitted pre-contract-award to convey each potential supplier’s capability related to information management.

Task Information Delivery Plan (TIDP)
This is submitted by each task team working on the project to set out each team’s responsibility for delivering information.
BIM Execution Plan

Responsibility Matrix
sets out the relationship between disciplines and production of information or models

Master Information Delivery Plan (MIDP)
Collates all the TIDPs against the construction programme

BIM Execution Plan (BEP)
This will be submitted pre contract to address issues raised in the EIR and with more details with post contract to explain the suppliers methodology to deliver the project in BIM
Progress ...

- Land transfers Agreed
- Outline Master Plan Agreed with Statutory Authorities
- Project Finances Secured
- Surveys and Information Gathering Completed
- Agreed Construction Programme
- Sub Consultants Appointed
- Planning Approval

- Project Team Identified
- Training and Development Undertaken
- BIM Execution Plan Developed
- Ongoing BIM Meetings
- BIM outputs Defined
- Contractor Engagement Meetings
Planning - Timeline

May 2014

July 2014

September 2014

November 2014

February 2015

Design Development

Public Consultation

Planning Submission

Contractor Procurement

Start on Site

Construction Time Line

February 2015

Phase I

September 2015

September 2015

Phase II

December 2015

March 2016
Final Thought

The biggest danger is that we get bogged down in a technical discussion, when BIM is a behavioural change programme more than anything else

David Philp
Head of BIM Implementation Cabinet Office
BIM for the terrified
Thank You For Listening!

QUESTIONS?