



#### Driving Efficiency through Systems Thinking (plus Lean and 6 Sigma)

NHMF Maintenance Conference 26<sup>th</sup> January 2010





## So what did we do? Overview



- Systems and Lean Thinking
- Using the concepts to deliver improved Customer satisfaction and delivery performance
- Applying it to your own organisation Considerations for success









## Are they delivering the ...

## ? Best value for money

## ? Best performance

## ? High strategic value









## To deliver what the Customer requires in the best possible way we need to maximise service delivery by considering the <u>whole system</u>.





# **SYSTEMS THINKING**



#### One **Definition**:

Systems thinking deconstructs the idea that an organisation is made up of individual parts

Systems are made up of a set of components that work together to deliver the overall objective of the whole.









## A lot of synergy with Lean Thinking ...









#### One **Definition**:

# A way to do more & more with less & less, whilst providing <u>Customers</u> with exactly what they want.

Delivering best **VALUE** 

... more for the same

... the same for less







- 1. Specify what creates value from the customer's perspective
- 2. Identify all steps across the *whole value stream*, and remove waste.
- 3. Design the new value stream so that those actions that create value, **flow**.
- 4. Customer demand should pull work through the system.
- **5**. Strive for **perfection** by continually removing layers of waste!
- 6. The best people to design and deliver improvements to the process flow are the staff doing the job.









♦ More time available for other activities







## ? What is the level of waste (process) reputedly found within the UK Construction Industry ?

# Corruption is cheaper than inefficiency ...







### Lean Systems Thinking & 6 Sigma

Using the methodologies to deliver improved customer satisfaction from the delivery of housing maintenance and improvement contracts. Year 2 of 5.





## **Case Study 1**



- Property Regeneration Programme with Wolverhampton Homes
- Year 1 of 4
- Scope of works:- New kitchen, bathroom, central heating, electrical rewire, external works or some combination of these
- Occupied properties





## What did we do?



Established who were our Customers





SUPPLY CHAIN



## What did we do?



- Established what was valued by the Customer?
   <u>TENANT</u>
  - Good quality products and workmanship
  - On-time with minimum disruption
  - Clean
  - Safe
  - Well informed

#### <u>CLIENT</u>

- Value for money
- Industry leading performance
  - Tenant Satisfaction, Quality, Delivery, Cost





## What did we do?



Applied a structured approach







## Improvement Activities Completed



- Value Stream Process Mapping the whole system
- Tenant Satisfaction
- Eliminating wastes and inefficiencies Problem Solving
- Programme Performance Achieving improved 'Flow'
- The Central Stores 5C / 5S Workplace Organisation
- Cost Analysis and Challenge





## Mapping the Current State



Wolverhampton Homes

#### **Current State**

- Multi-discipline team
- Mapped end-to-end processes
- Quantified the map
- Identified issues and estimated impact

### Future State

- Customer focused right to left thinking
- System / processes changes
- Prioritised improvement plan







### **Improving Tenant Satisfaction**



Wolverhampton Homes



One Partner Contractor had a TS score higher than Thomas Vale

Key areas on which to focus improvement:-

#### Question 4

The respect shown to you and your home

#### Question 6

How clean and tidy the Tradesperson left your home







#### **Improving Tenant Satisfaction**





#### Responsibility matrix for supporting Tenants

		Days within programme							Days within programme												
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Trades	Complete Daily Work Diany for Tenant Information	Complete Daily Work Diary for Tenant Information	Complete Daily Work Diary for Tenant In formation	Complete Daily Work Diary for Tenant Information	Complete Daily Work Diary for Tenant Information	Complete Daily Work Diary for Tenant Information	Complete Daily Work Diary for Tenant Information	Complete Daily Work Diary for Tenant Information	Complete Daily Work Diary for Tenant Information	Complete Daily Work Diary for Tenant Information	Complete Daily Work Diary for Tenant Information	Complete DailyWork Diary forTenant Information	Complete Daily Work Diary for Tenant Information	Complete Daily Work Diary for Tenant Information	Complete Daily Work Diary for Tenant Information					
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#### Programme Performance – Achieving Improved 'Flow' Improving Property Completion Time

### Analysis showed that the average duration of properties completed within 25 days, was 22.5 days.





## **Eliminating Production Losses**



- Delays & disruptions
- Snags & defects



# Minimising delays and moving towards right first time quality





#### Problem Solving Improving Quality Performance



**Minor Snagging** 



### **Improving Works Delivery**



Wolverhampton Homes

#### **Improvement Activities:**

- Direct observation
- Work specification
- Innovation in products & materials
- Work methods, set-up, tools & materials

















## Improving Property Completion Time Implementing a Lean Programme

#### Establish a programme with improved flow

- Activity durations waste free, efficient methods, better allocation of work within the various gangs
- Better interaction of Trades
- Aligned to the defined 'pace'
- Next 'customer' concept
- Plan for what you want to happen









#### **Maximising Value-Adding – Phase 1**











# Improving Property Completion Time Phase 1 – Achieve the 15 day time



- Now rolled-out to all work streams.





#### Phase 2 : Stabilising the Programme





#### Improved Customer Satisfaction - Delivered!

TENANT	CLIENT	PROCESS STAKEHOLDERS				
Less Disruption	Satisfied Tenants	Efficient Methods				
Predictability	Industry Leading	Consistency				
RFT Quality	Performance	Productivity				
Well Informed	Value For Money	Reduced costs				
Value for Money	Rate of Completion	Predictability				





## **SUMMARY - BENEFITS**



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	TENANT SATISFACTION									
IVE	Tenant Satisfaction	98 - 100%								
	PROGRAMME									
	Works Duration (13 or 15 days)	33 - 42%								
QUANTITATIVE	Productivity	> 39%								
NT	QUALITY									
QUA	Defects at Handover	To zero								
	Snags	35%								
	COST									
	Savings per annum (At the time of the Activity)	£75K								





## SUMMARY - BENEFITS



Wolverhampton Homes

**Tenants:** Improved service and information to Tenants

**Programme:** Better 'flow' of trades. Improved morale. Productivity enhanced.

QUALITATIVE **Quality:** Improved alignment to scope of works and quality standards.

Central Stores: Improved organisation, configuration & control. Less damage. Improved H&S.

Improved clarity on R&Rs, information and communications.

Organisation and capability established for continuous improvement.

Enabled improvements in the whole set-up, organisation, operation and management of the programme.

Significant efficiency gains achieved!





#### Case Study 2 - Improving the Maintenance of Major Void properties



Wolverhampton Homes

#### **BEFORE** AFTER Improved pre-works processes **Major Voids** Multi-trade gang do whole house Trades sequenced to do works in property Controlled release of properties • Delays in property start • Improved works programme **Disruptions & 'void' times** Better work flow • Average key-to-key times 70 • **Ownership** • days but targeting 50 Cost and quality benefits



## **SUMMARY**



- The 'methodologies' <u>do</u> apply
- Real tangible benefits
  - Enhanced Customer Satisfaction
  - Quality, Delivery and Cost Performance and VFM
- Great synergy with true collaborative working
- There are barriers to implementation
  - Lowest price tendering
  - Leadership (or lack of it!)
  - Shallow appreciation / understanding
  - Traditional thinking





"The significant problems we have cannot be solved at the same level of thinking with which we created them".



"It won't work here mate!"

*"We are not the car industry"* 

"It's the way the construction industry is ..."

"Don't worry, it's the subbie's fault and I'll get them back at the end of the project"

Uptake has been slow, but evidence of key Clients now starting to drive Lean & Systems Thinking.







## Lean Systems Thinking is...

- Customer focused
- Considers the whole value chain
- Adding value, eliminating waste more for the same
- Proven
- A way of thinking & behaving managers need to enable the delivery of best Customer value
- A fundamental shift in culture
- Empowering people in the process to deliver to the Customer in the best way possible
- A huge opportunity if done right!
- Stretching can move people outside their comfort zone
- A journey





#### Wolverhampton Homes

STD WORK

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## Application to your own Organisation



- Current state diagnosis
- Clear vision and objectives
- Lean Systems strategy within 4 walls, project / programme focus, supply chain development
- Measures that matter
- Lead by example
- Implement pilot projects versus whole value chain?
- Apply a structured approach
- Grow in-house capability
- Establish a lean systems thinking culture
- Empower and enable
- Effective management and governance
- External help





Here is Edward Bear, coming downstairs now,



BUMP BUMP BUMP

On the back of his head, behind Christopher Robin.

It is, as far as he knows, the only way of coming downstairs, but sometimes he feels that there really is another way, if only he could stop bumping for a moment and think of it.



Stand back, review, challenge, improve You'll feel better for it!



# Thank you ...







