



Improving Quality Through Collaboration

A CQI ConSIG Presentation

Welcome

The Chartered Quality Institute (CQI) is a global professional body advancing the practice of quality management in all sectors.

The Construction Special Interest Group (ConSIG) has been established as a representative group for quality professionals within the construction industry to advance quality and improvement in the construction industry.

- **Construction Quality Awareness**
 - Quality training is required (CIOB, GIRI etc.)
 - Framework developed for non-quality professionals based on concepts of IOSH
 - <http://consig.org/quality-awareness-training>
 - **Construction Quality Knowhow (consig.org/quality-know-how)**
 - Information to help manage quality on a day to day basis
 - Articles published on Designing Buildings Wiki (<https://www.designingbuildings.co.uk/wiki/Home>)
 - E.g. Inspection and Test Plans
 - **Construction Cost of Quality (consig.org/quality-know-how)**
 - PhD study utilising post completion insurance data to demonstrate cost of poor quality
-

Today's Event



- **Introduction**
 - Paul Greenwood (MD – Greenwood Consultants)
 - **A Client Perspective**
 - Greg Faria (Quality Manager, Airside/Landside, Heathrow)
 - **Tier 1 Contractor Perspective**
 - Elvin BOX (Associate Director - Mace)
 - **Tier 2 Contractor Perspective**
 - Bethany McCulloch (Head of Quality, Careys Civil Engineering)
 - **Q & A Session**
 - Your opportunity to quiz the speakers
-

IMPROVING QUALITY THROUGH COLLABORATION

**How collaboration can enhance quality and
generate value in construction**

Paul R Greenwood
Managing Director
Greenwood Consultants

CQI Construction Special Interest Group
30th May 2018
@CQIConSIG #consigIQTC

GREENWOOD
CONSULTANTS

Eur Ing **Paul Greenwood**
EMBA CEng MIET FCMi FCQI MICW

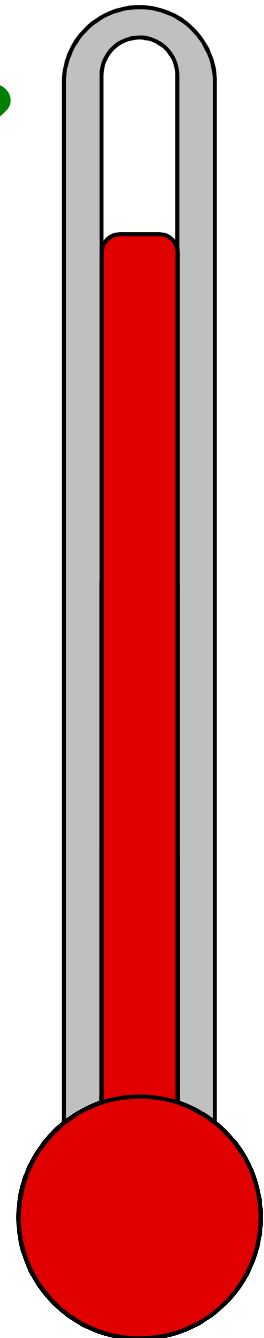
- Collaborative Working Champion
Constructing Excellence
- Associate Director
Institute for Collaborative Working
- Convener
ISO TC 286 Collaborative Business
Relationship Management Systems
- Experience:
 - Construction: airports, expressways and housing
NL, KSA, MY, TH, SG, HK and UK
 - High-tech design, manufacturing and service
UK and USA



GREENWOOD
CONSULTANTS

What is Your Partnering Temperature?

- Strategic Partnering
 - Objectives + Incentivisation + Dispute Prevention + ...
 - Strategic alliance agreement or term contract
eg. SAA + NEC, TAC-1 + PPC 2000/TPC 2005
- Project Partnering
 - Partnering Charter + Objectives + Incentivisation
 - Non-confrontational form of contract
eg. NEC, Opt C (Target), Opt X12 (Part'), Opt X20 (KPIs)
- Non-Confrontational Contract
 - No special mechanisms
 - Non-confrontational form of contract eg. NEC
- Partnering Charter + Traditional Contract
 - Commitment to working well together
 - Traditional form of contract eg. JCT



Agenda

- What is Collaboration and Why Collaborate?
 - What is Value?
- The Constructing Excellence Principles of Collaborative Working
- Collaborative Frameworks
 - The Government Construction Strategy
- The ISO 44001 Approach to Collaborative Working
 - Stages and Themes
- Hot off the press ...
- Conclusions

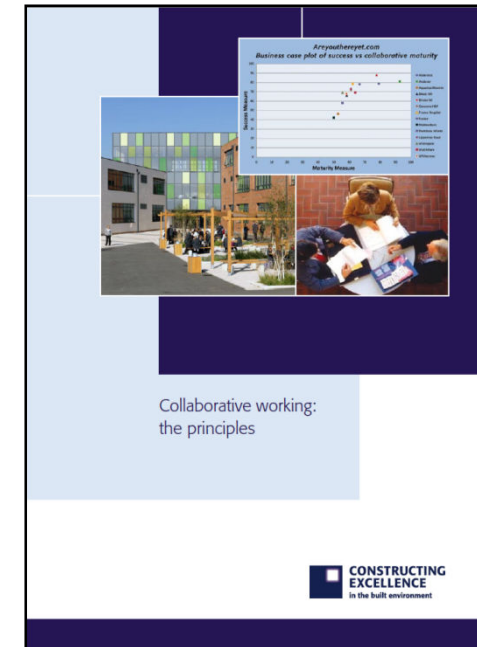


GREENWOOD
CONSULTANTS

What is Collaboration and Why Collaborate?

Collaborative Working

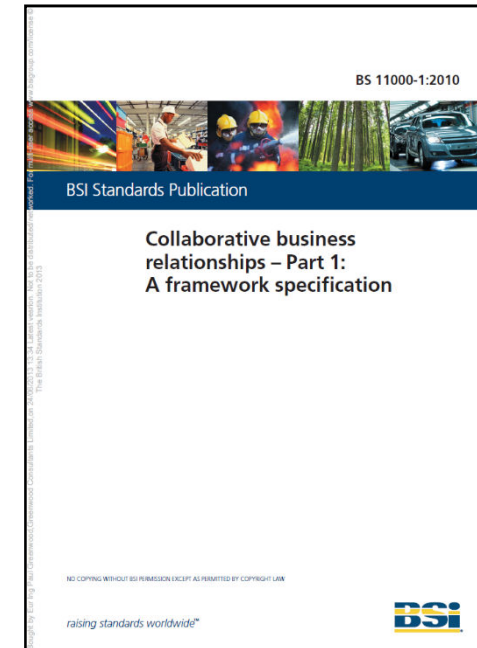
“Working together in a seamless team to common objectives that deliver benefit to all through mutually beneficial (including commercial) alignment.”



GREENWOOD
CONSULTANTS

Collaborative Business Relationships

“Formal and/or informal business arrangements where two or more discrete organisations collaborate to create mutual value.”

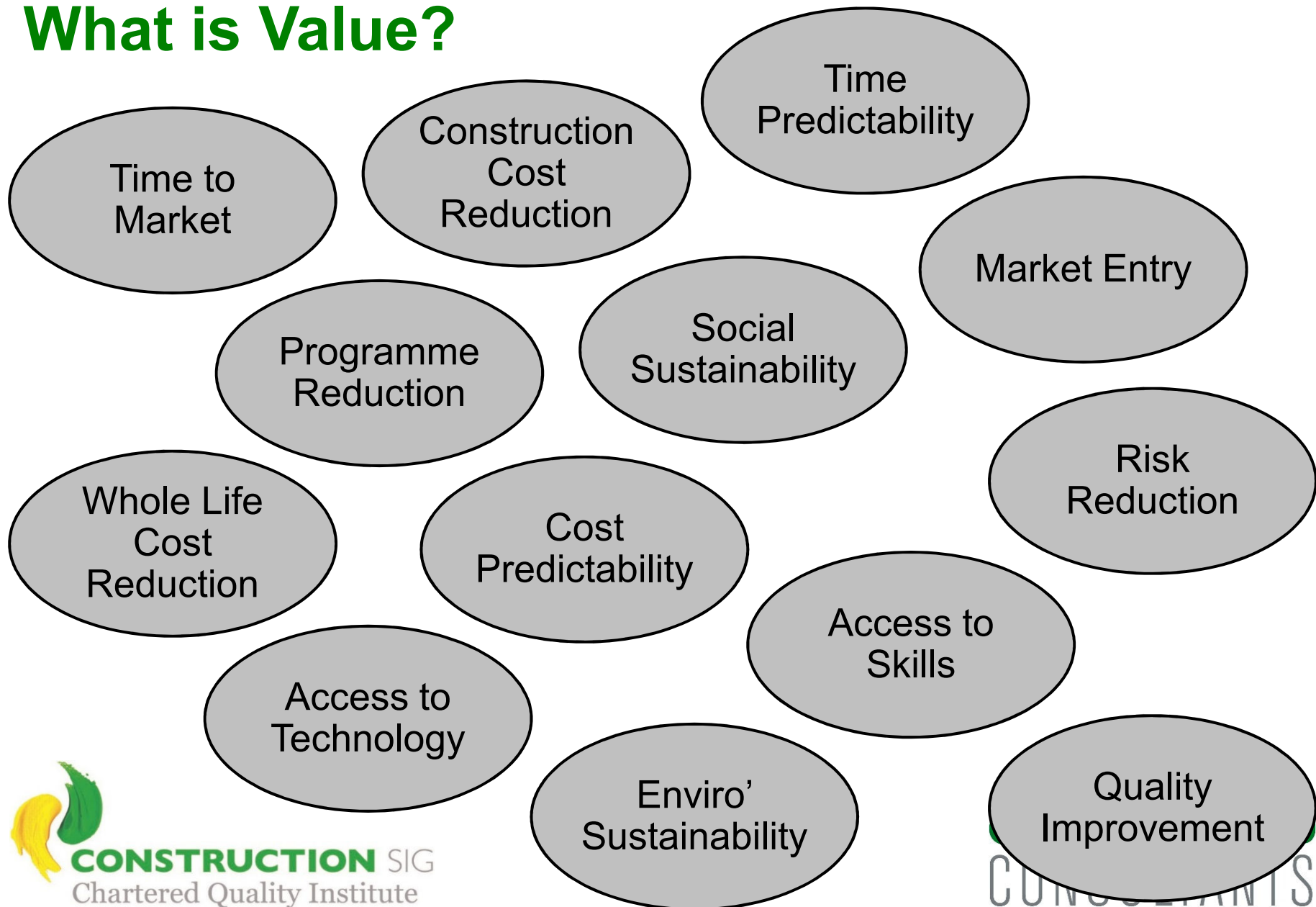


BS 11000-1:2010 Collaborative Business Relationships
- Part 1: A Framework Specification.

CONSTRUCTION SIG
Chartered Quality Institute

GREENWOOD
CONSULTANTS

What is Value?



The Long Term Cost/Value of Owning/Using Buildings

City of London office

- Building construction
 - Project management
 - Design
 - Construction
- Building maintenance and operating cost
- Business operating cost
- Business outcomes

*Business
operating
cost
200*

*Business
outcomes
2000*



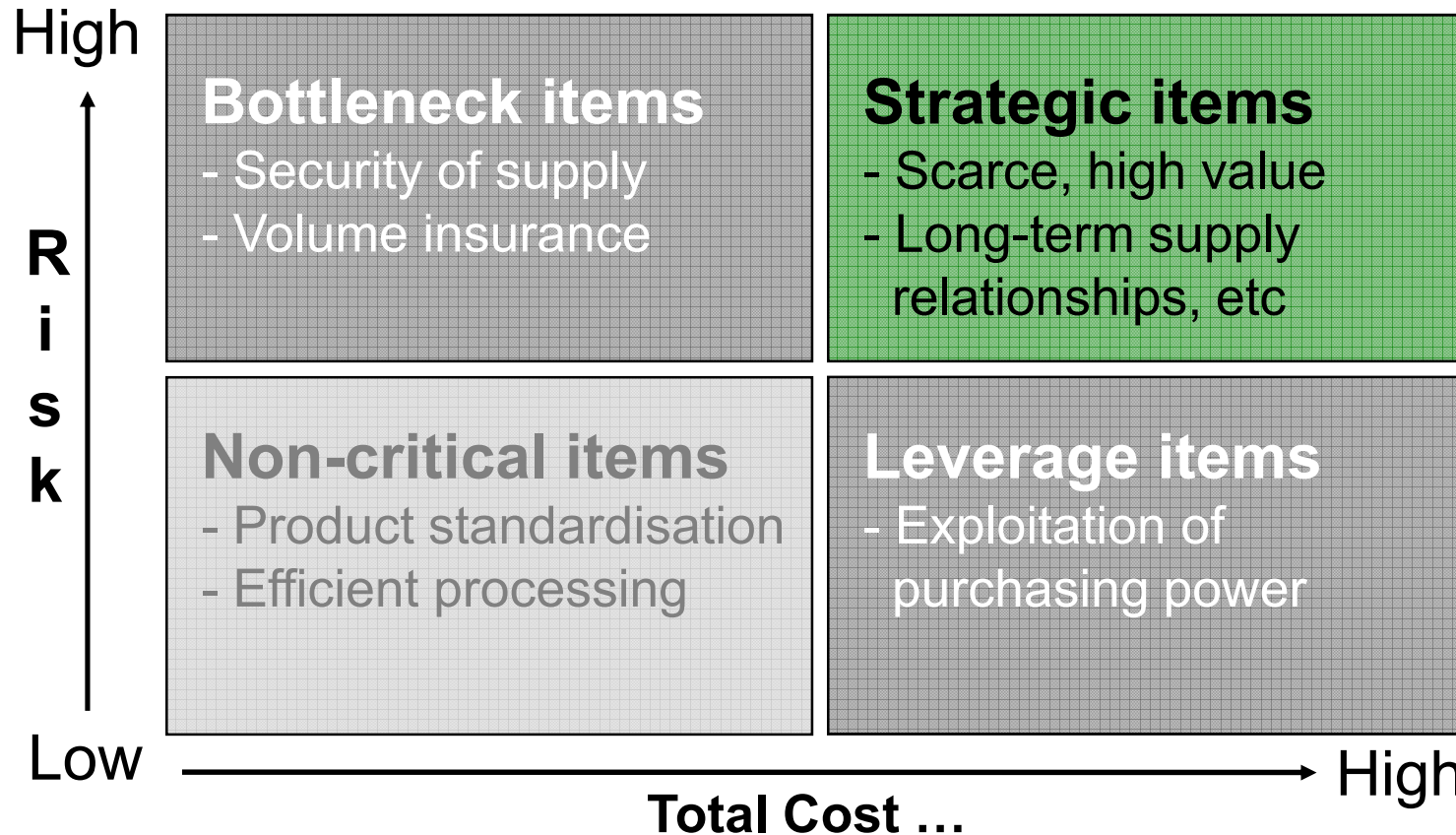
'The Long-Term Costs of Owning and Using Buildings'
R Evans, R Haryott, N Haste and A Jones,
The Royal Academy of Engineering, 1998.

CONSTRUCTION
Chartered Quality Institute

1

5

Purchasing Portfolio Positioning

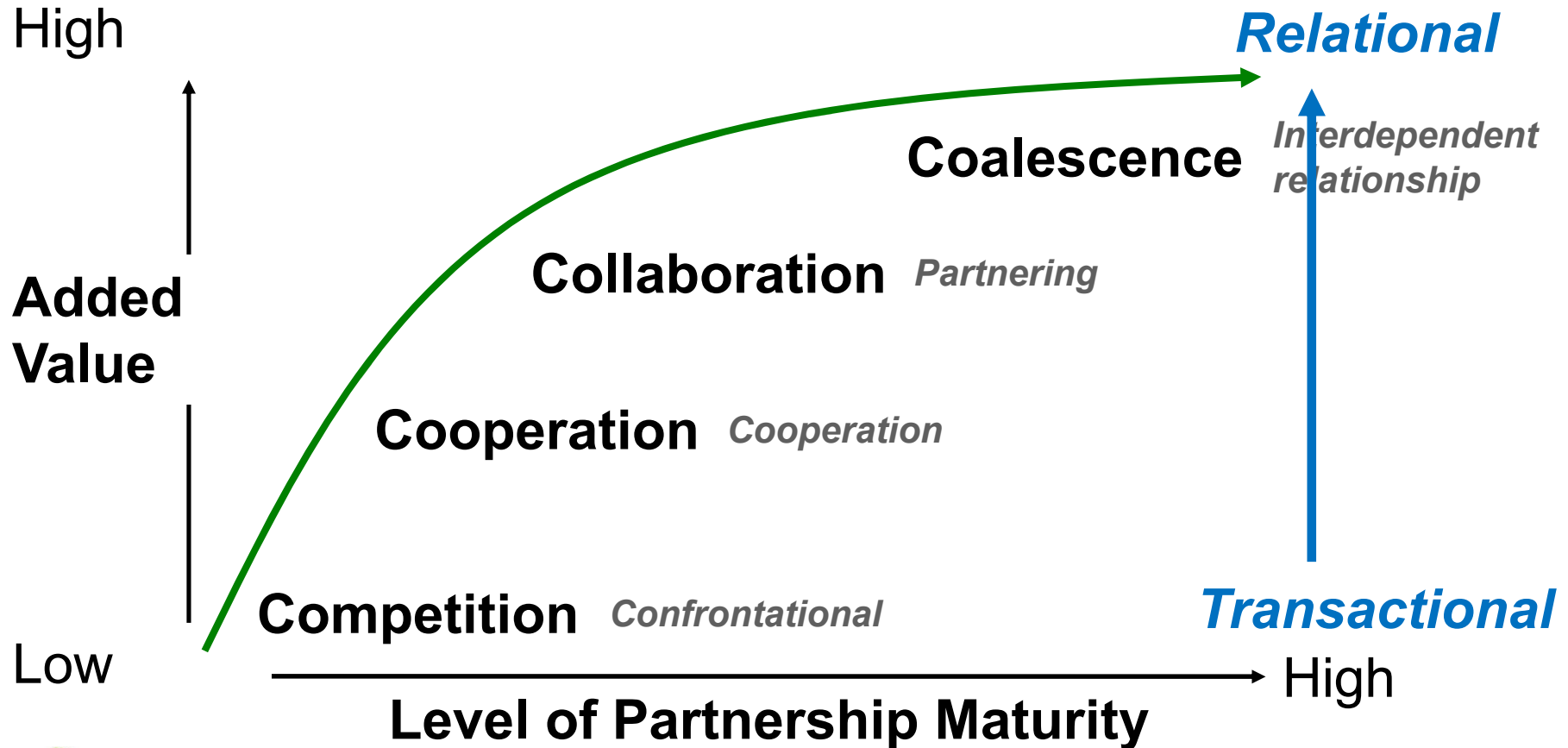


Based upon 'Purchasing Must Become Supply Management',
P Kraljic, Harvard Business Review, October 1983.

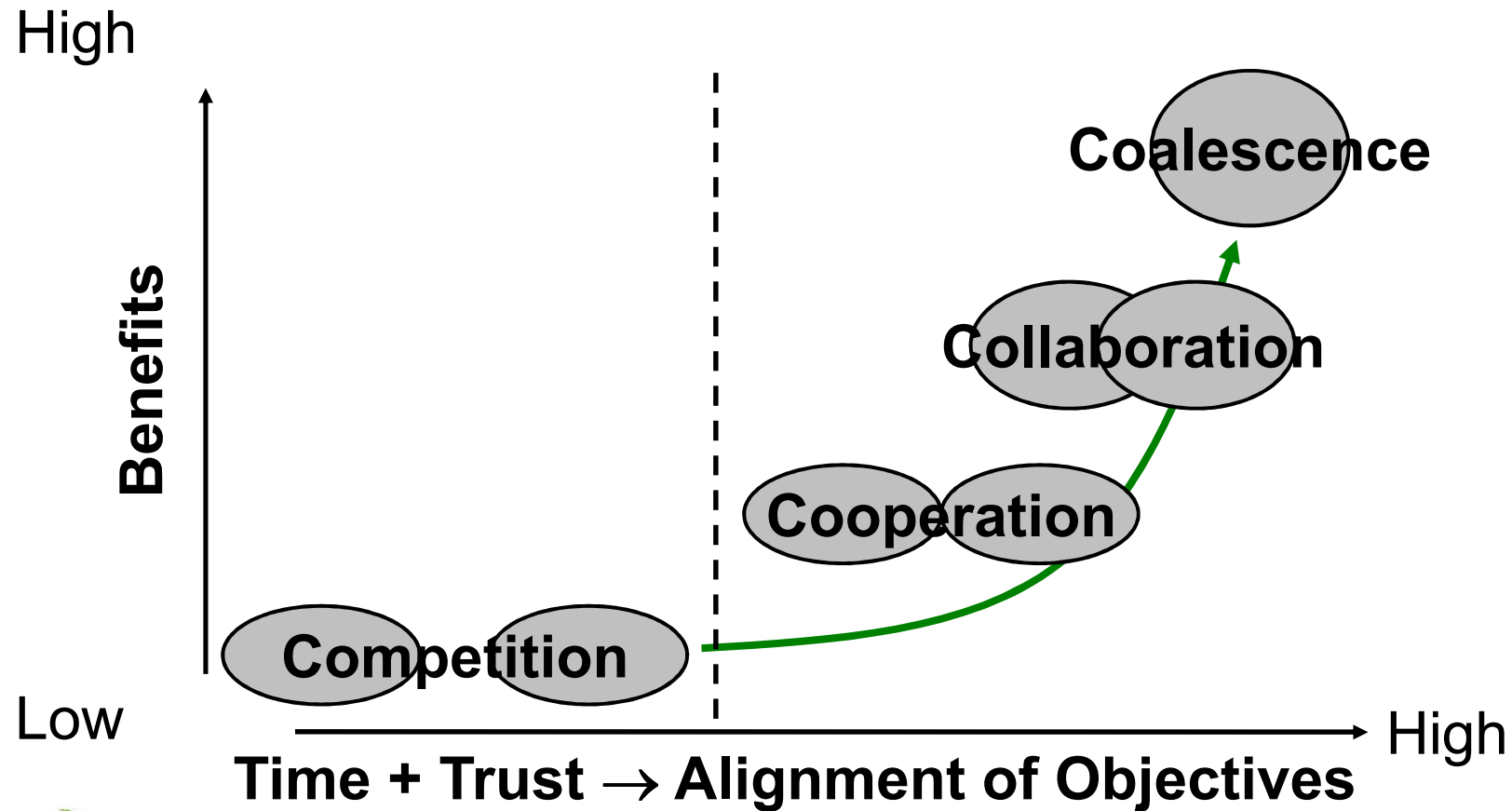
CONSTRUCTION SIG
Chartered Quality Institute

GREENWOOD
CONSULTANTS

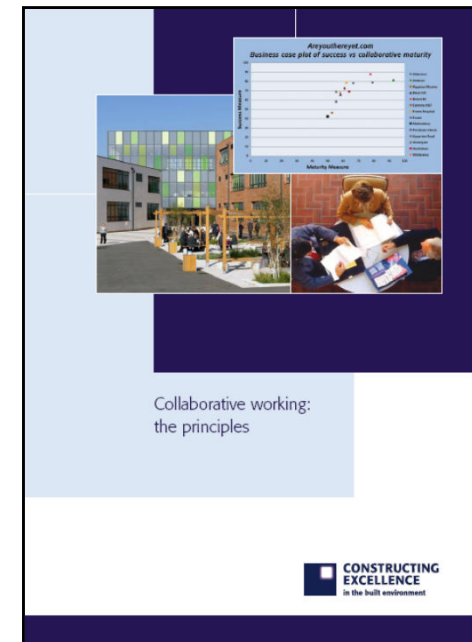
Partnership/Collaborative Maturity



Alignment of Objectives

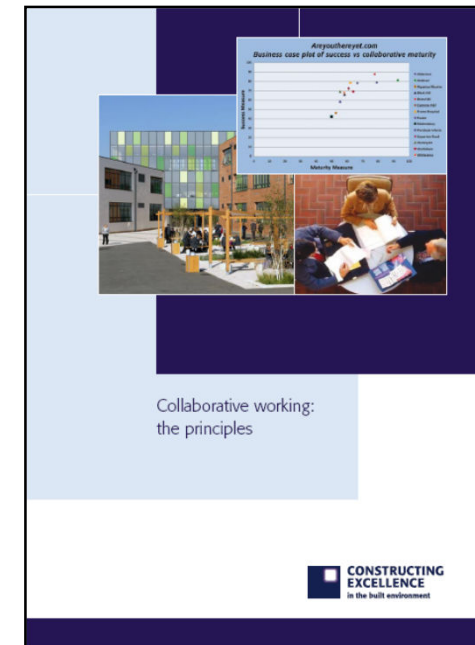
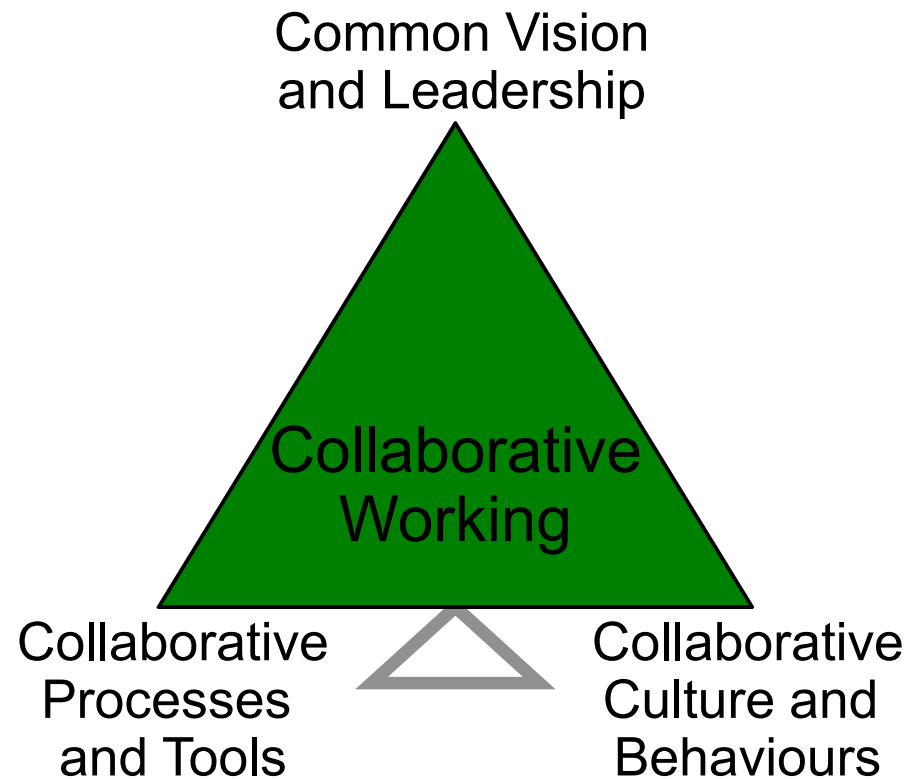


The Constructing Excellence Principles of Collaborative Working

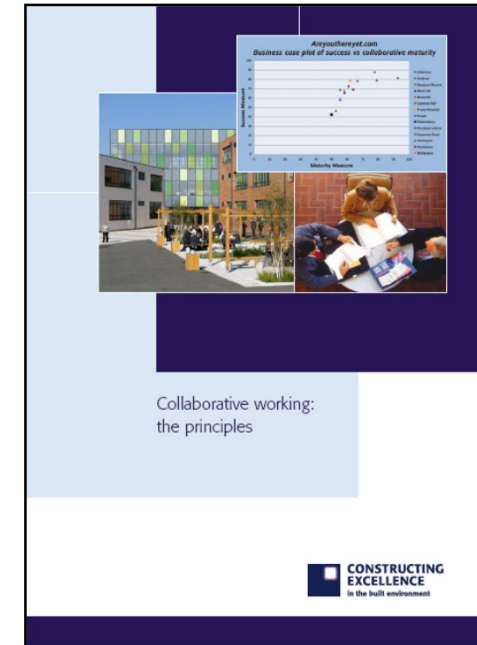
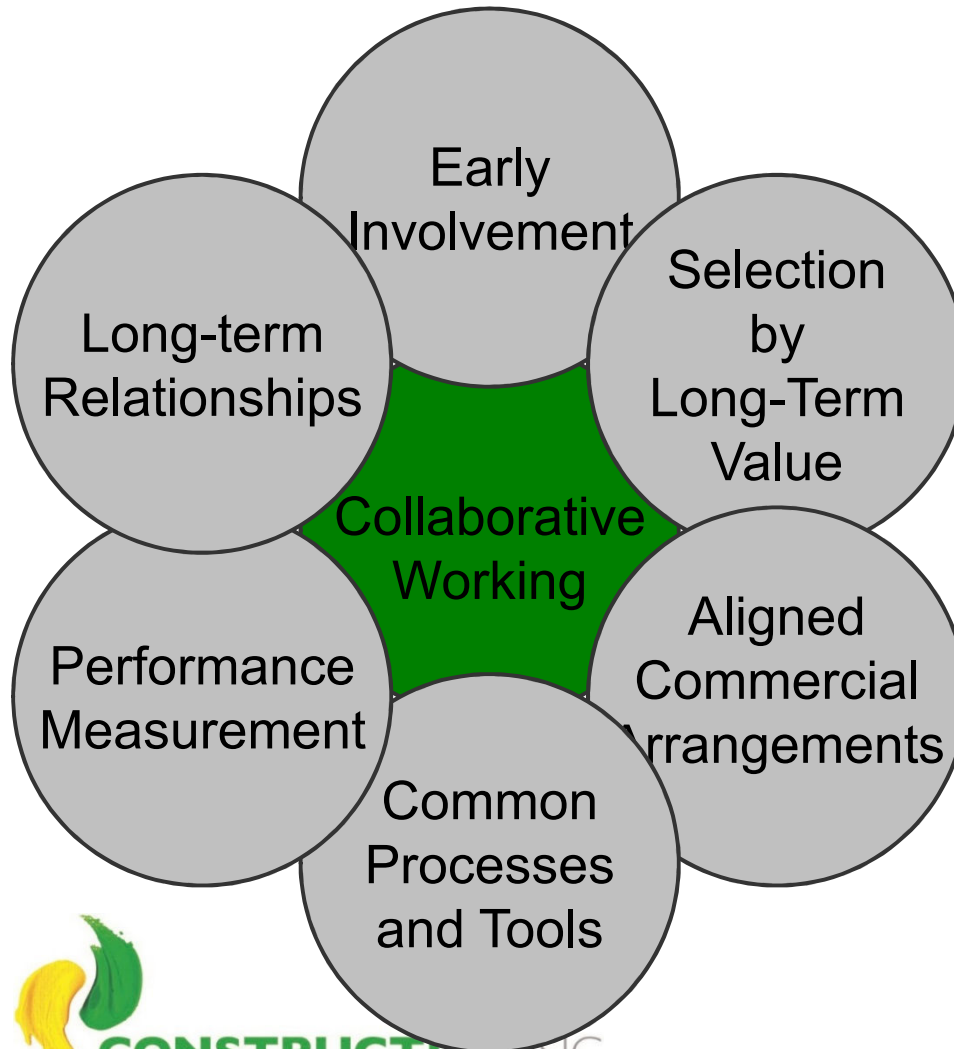


GREENWOOD
CONSULTANTS

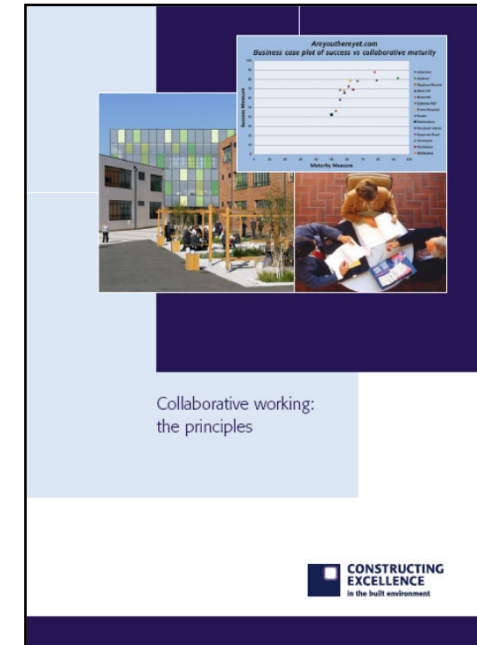
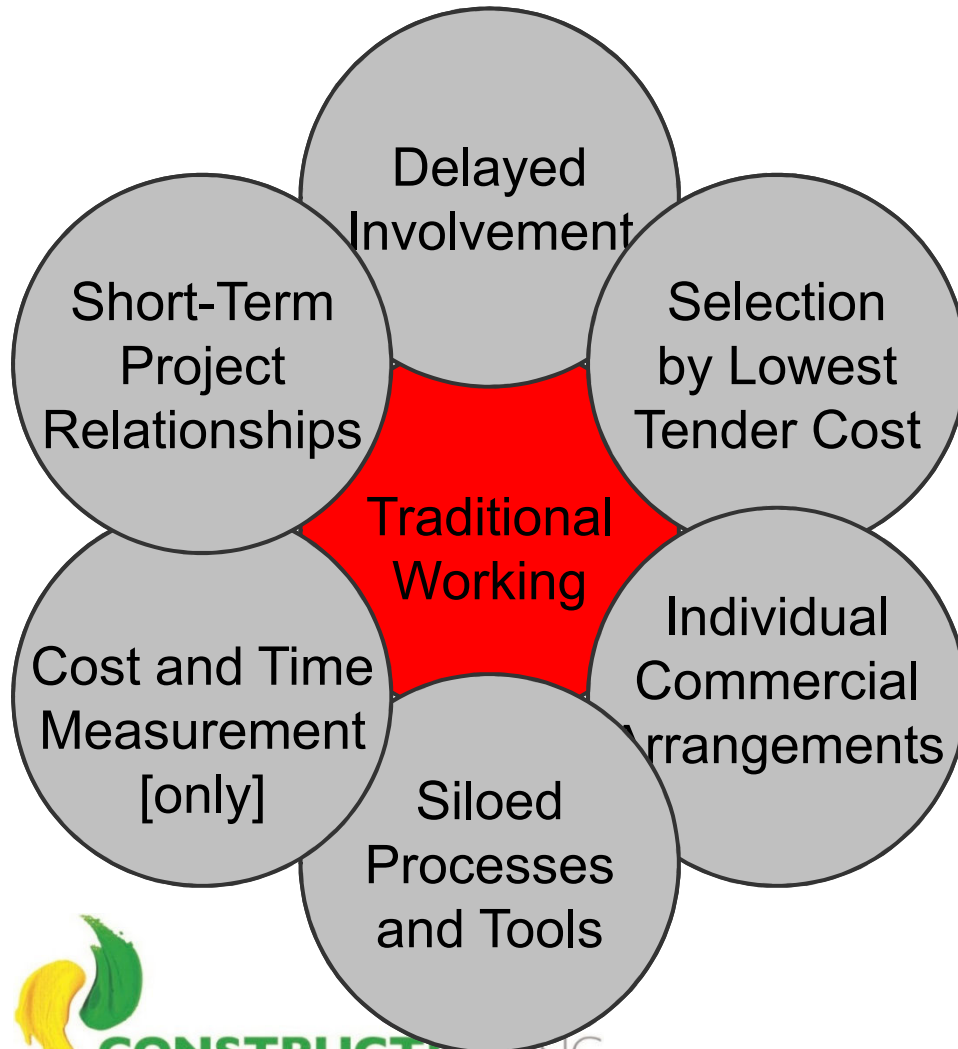
Three Overriding Principles



Six Critical Success Factors



Six Critical Failures



Collaborative Frameworks

An overview of some popular frameworks, contracts, standards, etc

Collaborative Flavours in Construction



Other collaborative contracts/frameworks are available:

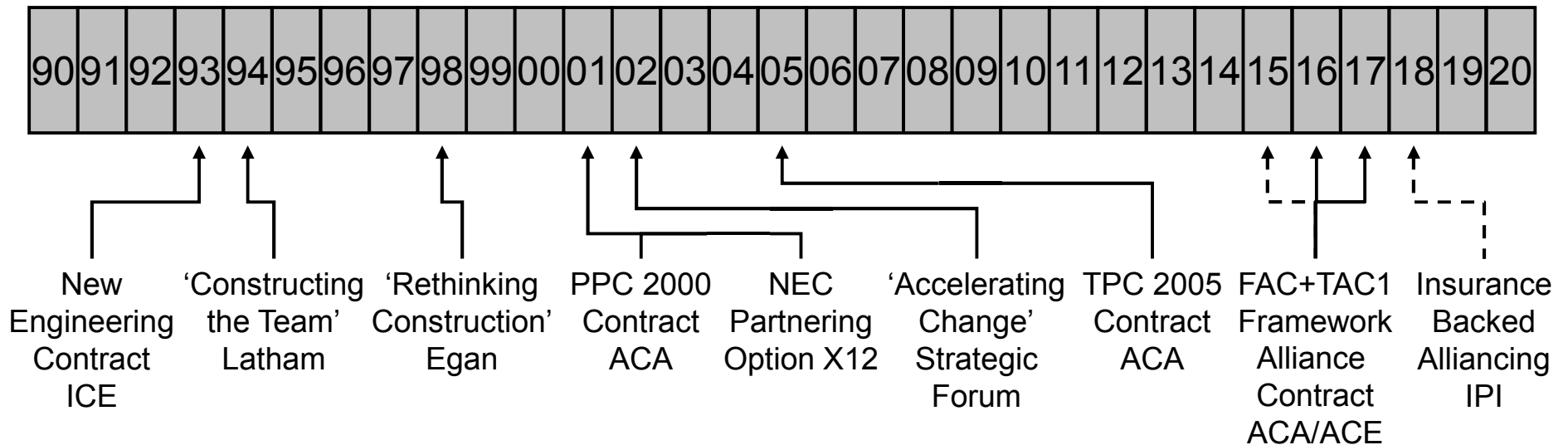
- UK Public Sector Partnering Contract
- JCT Constructing Excellence Contract
- ...

GREENWOOD
CONSULTANTS

- UK Public Sector Partnering Contract
- JCT Constructing Excellence Contract
- ...

GREENWOOD
CONSULTANTS

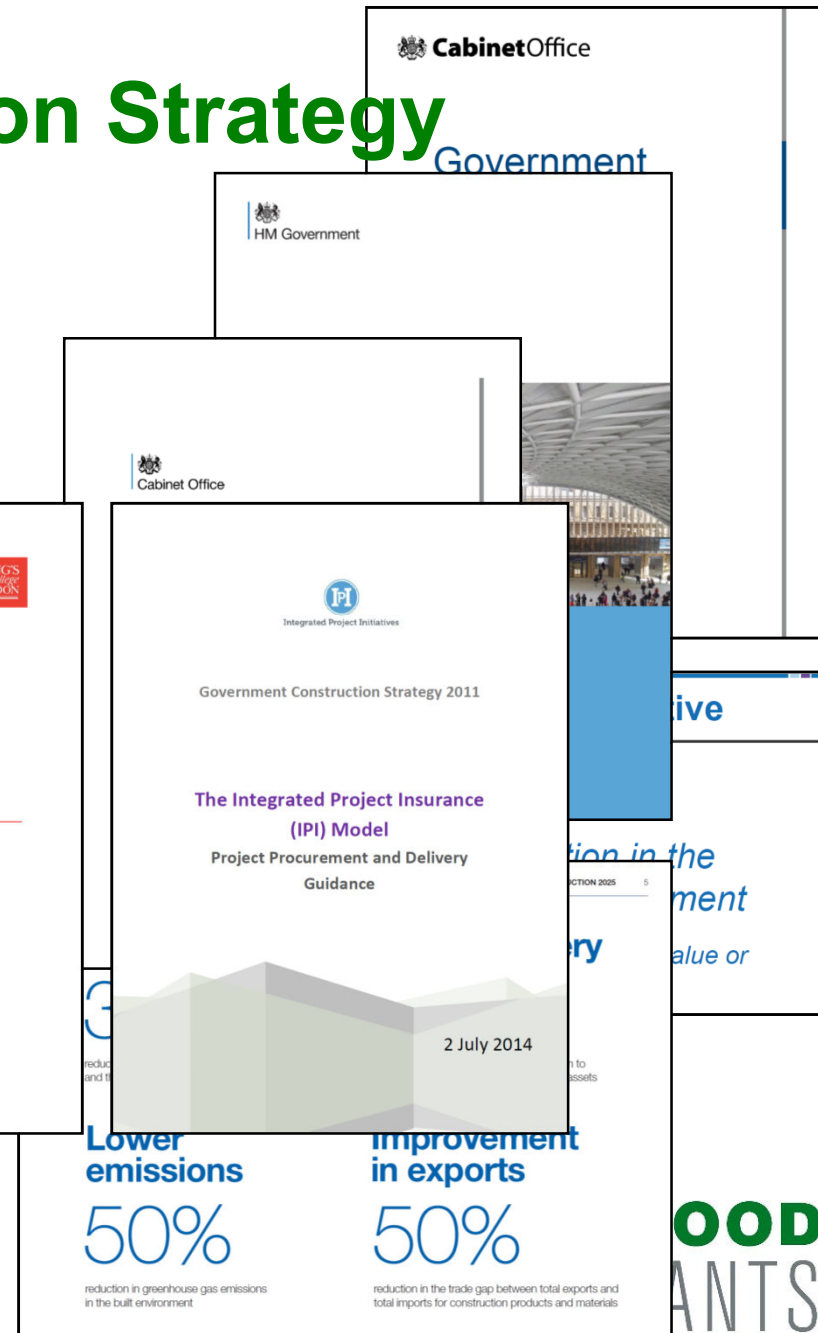
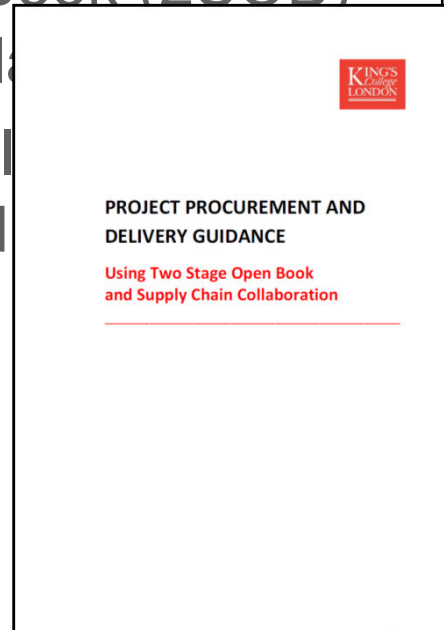
Collaboration Timeline



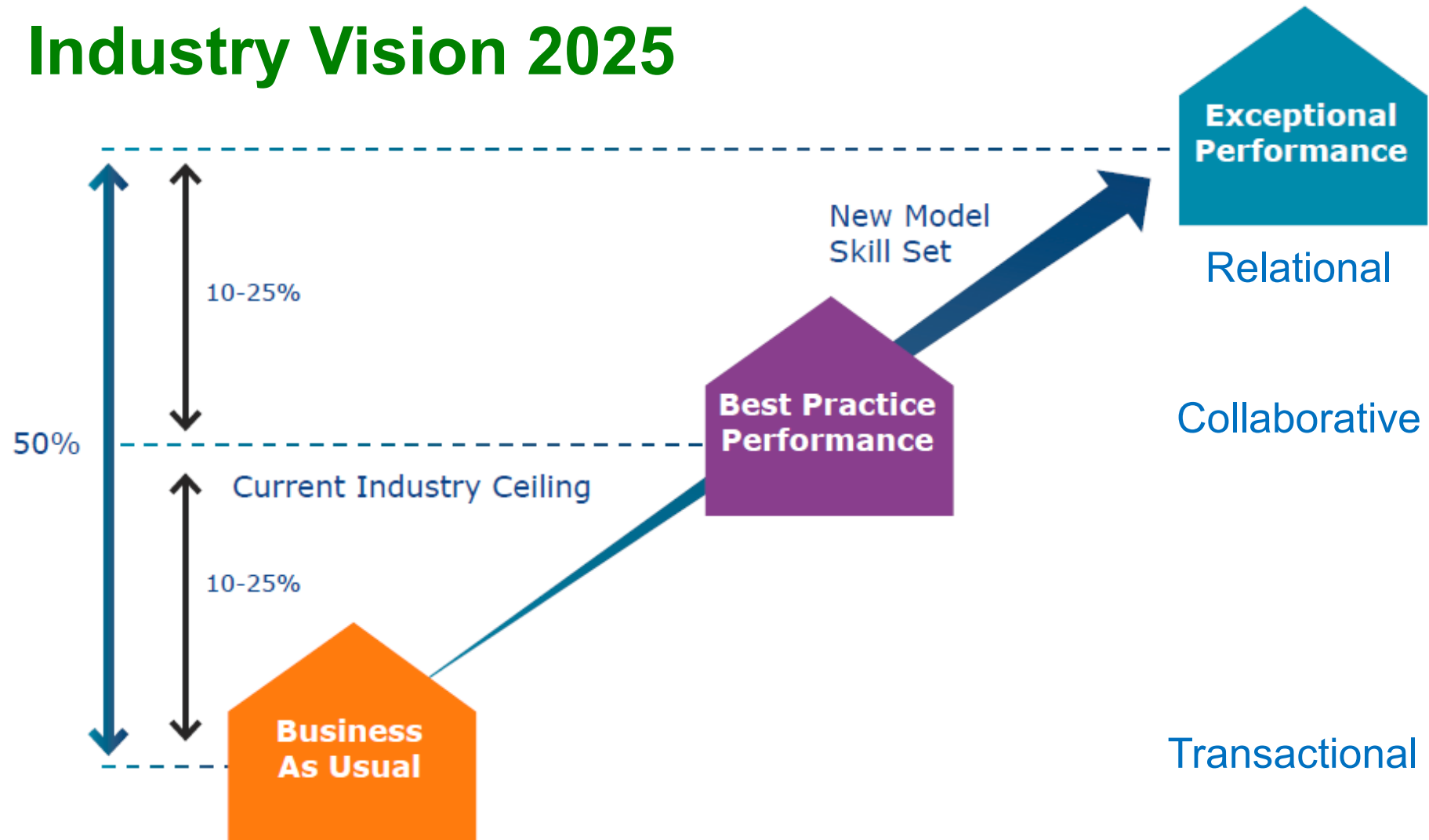
Government Construction Strategy

New Models of Procurement

- ⇒ Cost-Led Procurement (CLP)
- ⇒ Two Stage Open-Book (2SOB)
- [S
- ⇒ In



Industry Vision 2025

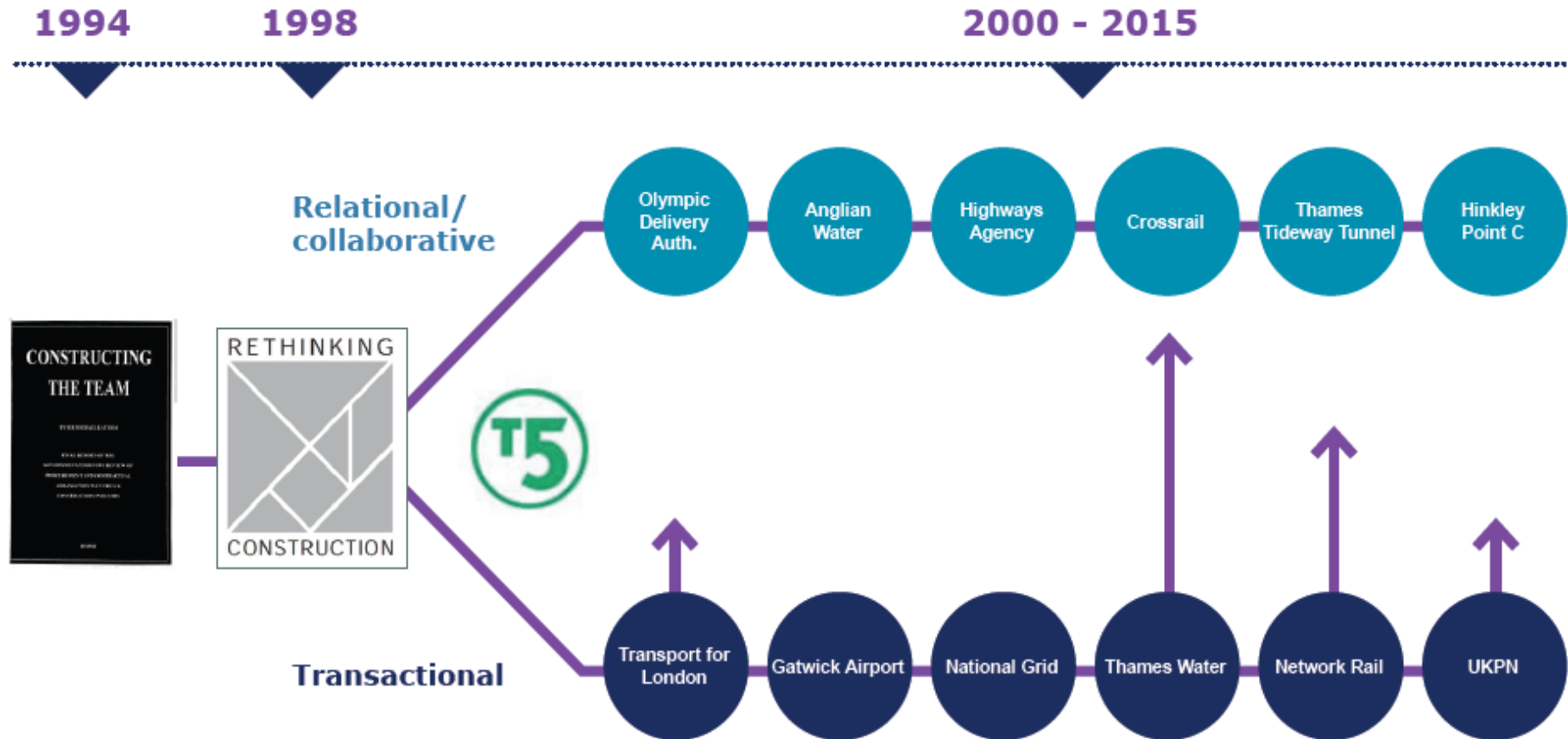


'An Industry Undergoing a Transformational Journey'
Murray Rowden, Chair of Constructing Excellence, CENE, May 2015.

CONSTRUCTION SIG
Chartered Quality Institute

GREENWOOD
CONSULTANTS

Move to Collaborative/Relational Models

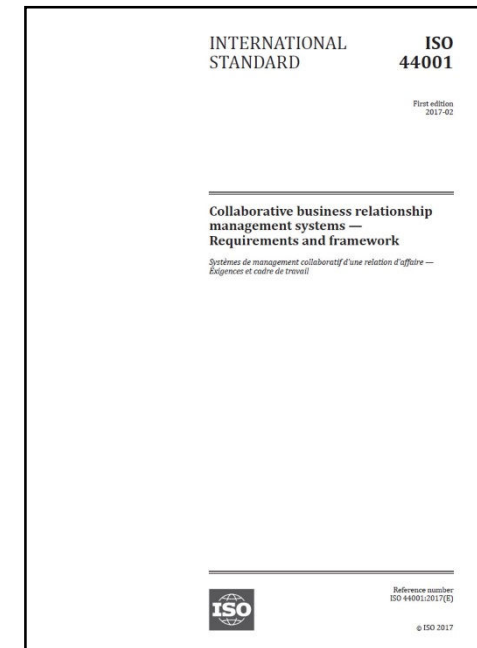


'An Industry Undergoing a Transformational Journey'
Murray Rowden, Chair of Constructing Excellence, CENE, May 2015.

CONSTRUCTION SIG
Chartered Quality Institute

GREENWOOD
CONSULTANTS

The ISO 44001 Approach to Collaborative Working



GREENWOOD
CONSULTANTS

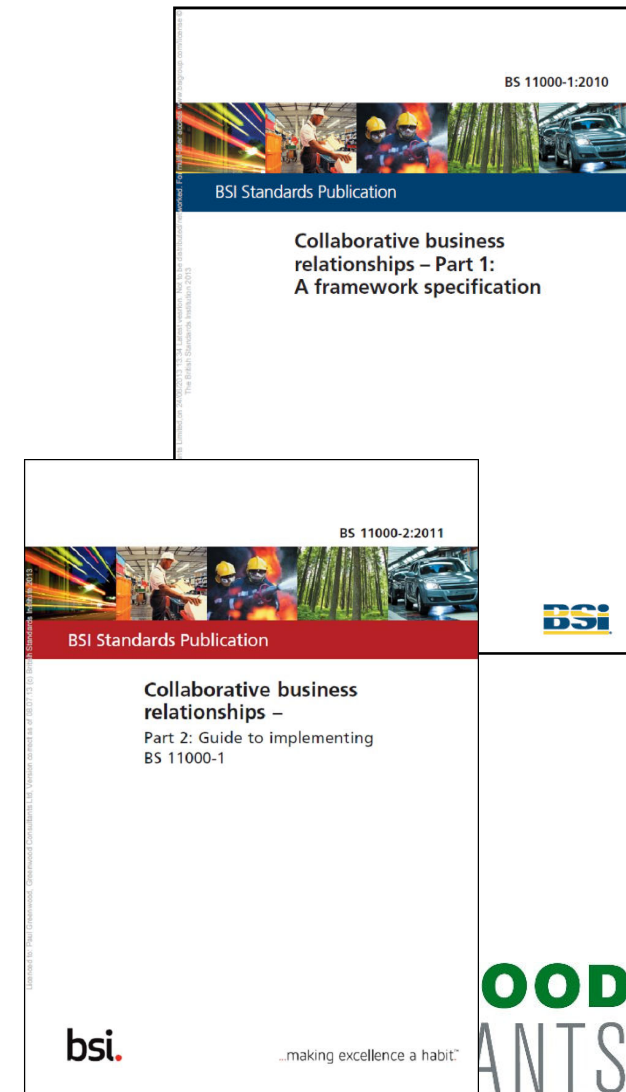
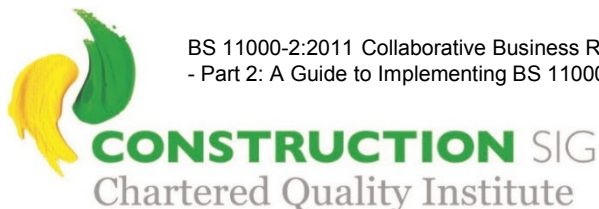
The Source - BS 11000



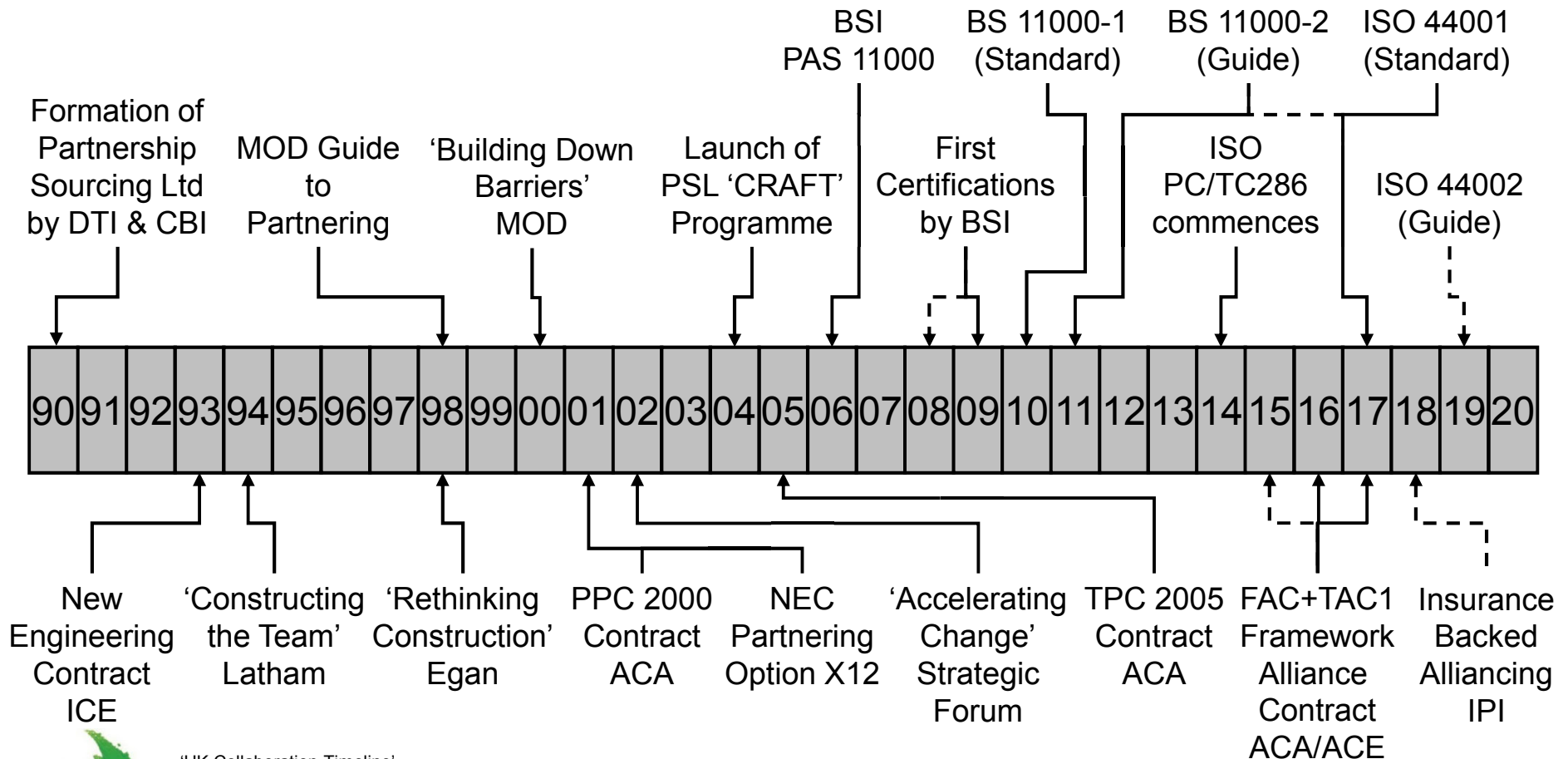
- “... a strategic framework to establish and improve collaborative relationships in organisations of all sizes.”
- From concept to disengagement
- Based upon the CRAFT Model - Institute for Collaborative Working
- First national standard of its type

BS 11000-1:2010 Collaborative Business Relationships
- Part 1: A Framework Specification.

BS 11000-2:2011 Collaborative Business Relationships
- Part 2: A Guide to Implementing BS 11000-1.



Collaboration Timeline



'UK Collaboration Timeline',
© Greenwood Consultants, February 2018.

CONSTRUCTION SIG
Chartered Quality Institute

GREENWOOD
CONSULTANTS

Applicable Relationships

- Single programme or project
- Individual relationship
- Multiple relationships
- Particular types of relationships
- ...

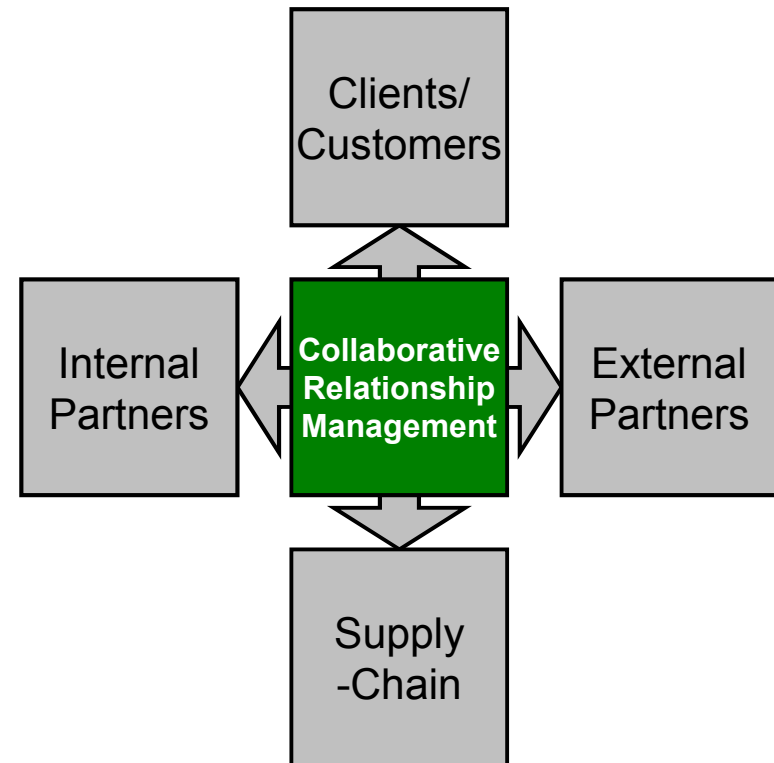
“... where collaboration can open new strategic opportunities”

“... potential for improvement through the adoption of a collaborative relationship”



CONSTRUCTION SIG
Chartered Quality Institute

Based on 'Multi-Dimensional Relationships' (aka North-South Diagram),
BS 11000-1:2010 Collaborative Business Relationships - Part 1.



GREENWOOD
CONSULTANTS

The BS 11000 Framework

Phase 1
Strategic

Stage 1 Awareness

Stage 2 Knowledge

Stage 3 Internal Assessment

Phase 2
Engagement

Stage 4 Partner Selection

Stage 5 Working Together

Stage 6 Value Creation

Phase 3
Management

Stage 7 Staying Together

Stage 8 Exit Strategy



'The BS 11000 Model',
© Greenwood Consultants Limited,
June 2013.

CONSTRUCTION SI
Chartered Quality Institute

BS 11000 - Phase 1 Strategic

Development of strategic commitment to collaborative working, based upon a thorough understanding of the opportunities, benefits, risks and constraints of this approach



Phase 1 Strategic

Phase 2 Engagement

Phase 3 Management

Stage 1 Awareness

Stage 2 Knowledge

Stage 3 Internal Assessment

Stage 4 Partner Selection

Stage 5 Working Together

Stage 6 Value Creation

Stage 7 Staying Together

Stage 8 Exit Strategy

BS 11000 - Phase 2 Engagement

Selection of committed partners and the establishment of joint objectives, structures, processes and systems for creating new value

Phase 1
Strategic

Phase 2
Engagement

Phase 3
Management

Stage 1 Awareness

Stage 2 Knowledge

Stage 3 Internal Assessment

Stage 4 Partner Selection

Stage 5 Working Together

Stage 6 Value Creation

Stage 7 Staying Together

Stage 8 Exit Strategy



CONSTRUCTION Standard
Chartered Quality Institute

BS 11000 - Phase 3 Management

*Management of
the joint value-
creating
relationship and
systematic
disengagement*

Phase 1
Strategic

Phase 2
Engagement

Phase 3
Management

Stage 1 Awareness

Stage 2 Knowledge

Stage 3 Internal Assessment

Stage 4 Partner Selection

Stage 5 Working Together

Stage 6 Value Creation

Stage 7 Staying Together

Stage 8 Exit Strategy



CONSTRUCTION Skills
Chartered Quality Institute

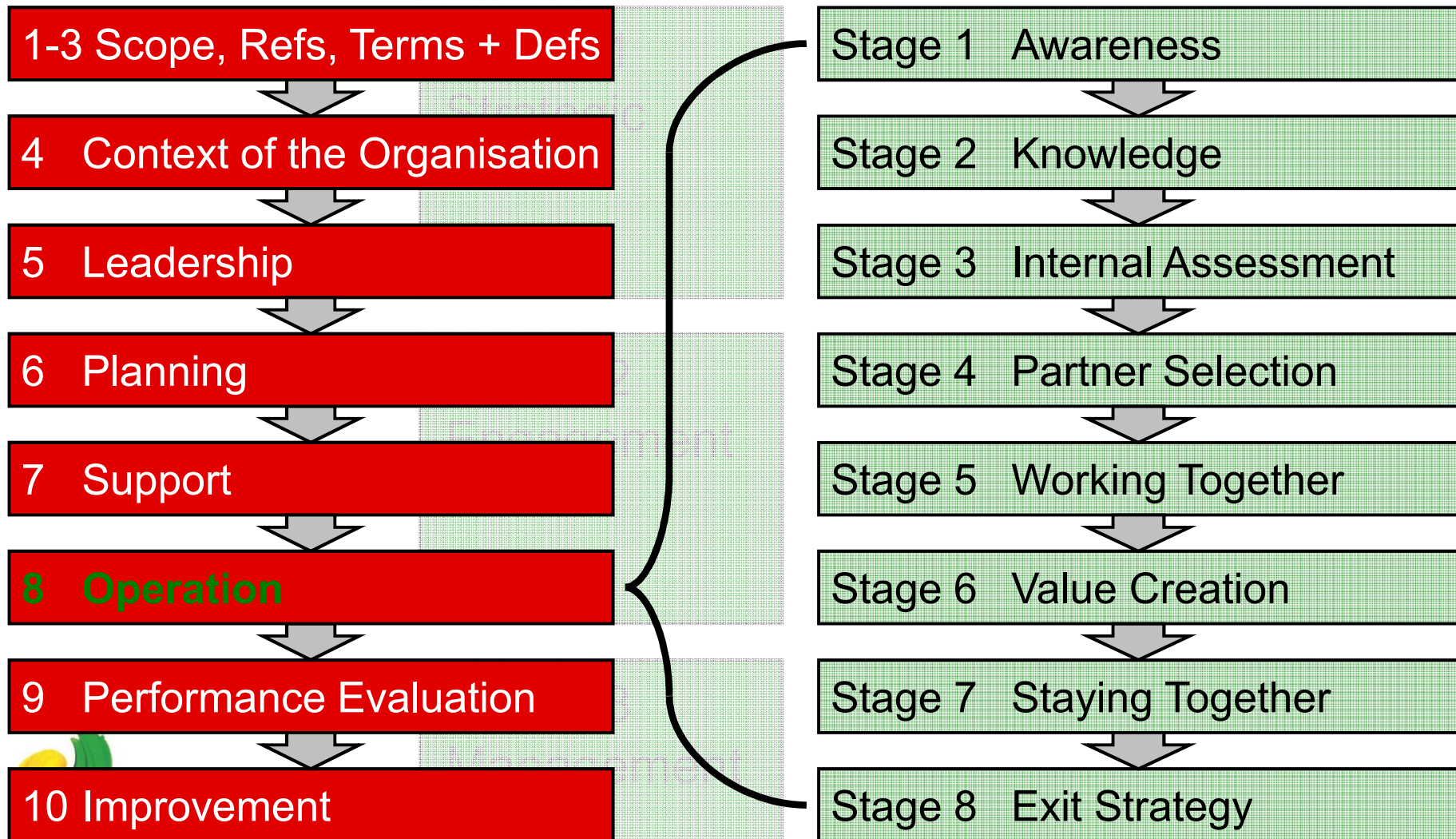
The ISO Annexe SL Model



- New high level structure for all management system standards
- Identical core text, common terms and core definitions
- Aids integration between management systems

GREENWOOD
CONSULTANTS

ISO 11000 and Annexe SL



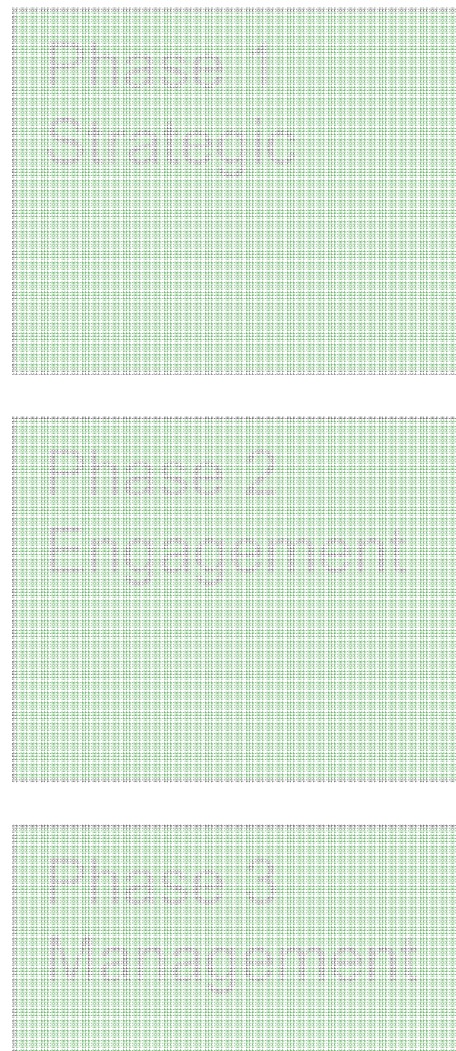
ISO 44001 Framework

Development of the organisation's corporate strategic approach to collaborative working

'ISO 44001 Model',
© Greenwood Consultants Limited,
February 2017.



Corporate



Stage 1 Operational Awareness



Stage 2 Knowledge



Stage 3 Internal Assessment



Stage 4 Partner Selection



Stage 5 Working Together



Stage 6 Value Creation



Stage 7 Staying Together



Stage 8 Exit Strategy Activation

ISO 44001 Themes

Vision and Values

Business Objectives

Leadership

Competence and Behaviour

Governance

Risk Management

Value Creation

Knowledge Management

Exit Strategy

Relationship Management Plan

Corporate

'ISO 44001 Themes',
© Greenwood Consultants Limited,
February 2017.

Hot off the press ...

CONSTRUCTION MANAGER

NEWS
Housing Forum urges two-stage tenders post-Grenfell

30 April 2018



The study was commissioned after the Grenfell fire

Report on building failures urges collaborative approach to procurement of residential projects.

A key report by the Housing Forum, commissioned after last year's Grenfell fire, has urged earlier involvement for designers and contractors, including two-stage tenders, to address the "significant minority" of residential projects which have serious defects.

Authored by a working group led by Andy Tookey, managing partner at consultant Baily Garner, and Nigel Ostime, delivery director at Hawkins Brown Architects, the publication describes two-stage procurement, on an open-book basis, as "a better way of identifying potential savings", rather than a single-stage competitive tender that might incentivise main contractors to find the cheapest way to discharge contractual obligations.



Stopping Building Failures, Housing Forum, 23rd May 2018

CONSTRUCTION SIG
Chartered Quality Institute

A REPORT FROM THE HOUSING FORUM
JUNE 2018

THE HOUSING FORUM



INTERACT
INFORM
INFLUENCE

Stopping building failures
How a collaborative approach can improve
quality and workmanship

Working with NHBC

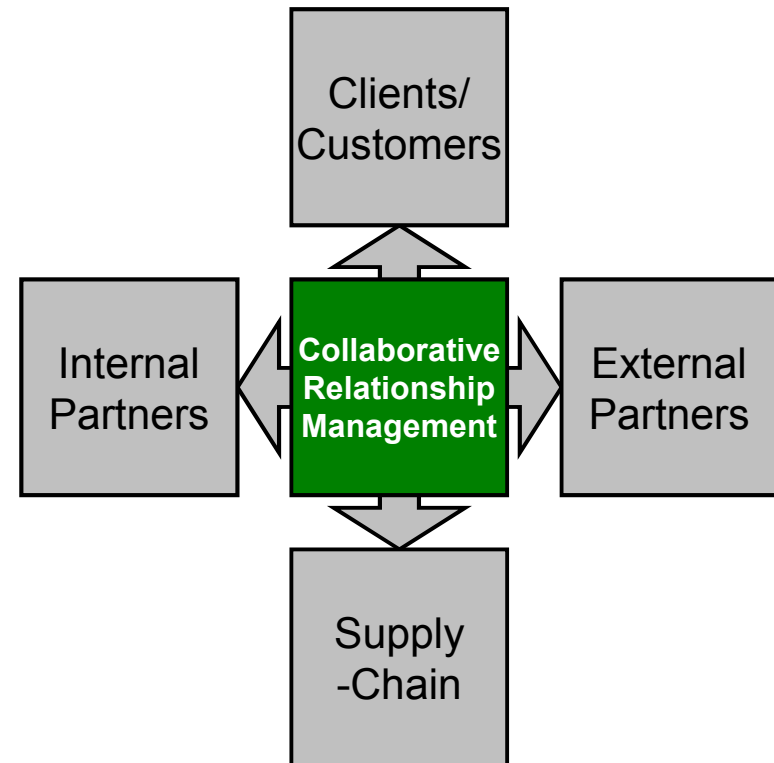


SPONSORS

 **BAILY GARNER**  **FUSION**
Building Systems  **Hawkins Brown**  **Hill**  **PRP**  **th** throwers & hamlin

Conclusions

- Define 'value'
 - What it means to you quality
- CE Principles
 - Vision and Leadership
 - Culture and Behaviour
 - Processes and Systems
- Construction-specific models
 - Support the Government's Construction Strategy
- ISO 44001
 - The most comprehensive framework for collaborative working



Thank You

PGreenwood@GreenwoodConsultants.com

GreenwoodConsultants.com

[@GreenwoodCLtd](#) [#ISO44001](#)

GREENWOOD
CONSULTANTS



Collaboration at Heathrow

A Client's perspective

30th May 2018

Greg Faria – Quality Manager, Airside / Landside

Heathrow
Development

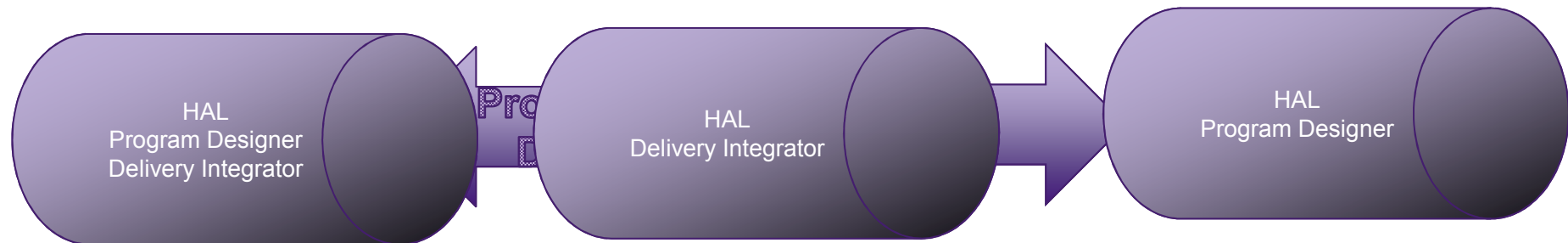
BACKGROUND

- Heathrow is a regulated business with a regulated period of a minimum of 5 years
- In the last regulated period all projects were tendered and we had in excess of 300 suppliers
- In the current period (year 4) we have 7 suppliers / partners
 - 4 programme Designers – Solution Design and Option Selection
 - 3 delivery Integrators – Construction Companies
 - 20 smaller firms looking after less complex projects
- This covers all projects

COLLABORATION AT THE PROCESS LEVEL

Understand Business Need
Develop functional requirements
Develop Options for Solution
Select Option
High Level design

Build Asset
FAT & SAT
Handover Documentation
Asset Integrated
Hand Over Asset –
Beneficial use



Buildability
Develop functional requirements
Develop Options for Solution
Select Option
High Level design

Benefits Realisation
Financial Closure
Lessons Learnt
Post Implementation
Review.

Heathrow
Development

THE CLIENT INTENT – CONTRACT SUMMARY

- CLIENT NO LONGER THE HUB OF ALL COMMUNICATION
- AT HANDOVER POINTS THE CONSTRUCTION CONTRACTOR IS EXPECTED TO ASSURE THE WORK OF THE OPTIONS DESIGNER
- THE OPTIONS DESIGNER IS EXPECTED TO WORK WITH THE PRODUCTION DESIGNER AND THE CONSTRUCTION CONTRACTOR TO DELIVER AN OPTIMAL SOLUTION TO THE CLIENT
- THE CONSTRUCTION CONTRACTOR IS FREE TO PROCURE SCHEME AND PRODUCTION DESIGN SERVICES FROM THE OPTIONS DESIGNER

EVALUATION OF COLLABORATION

INITIAL ASSESSMENT

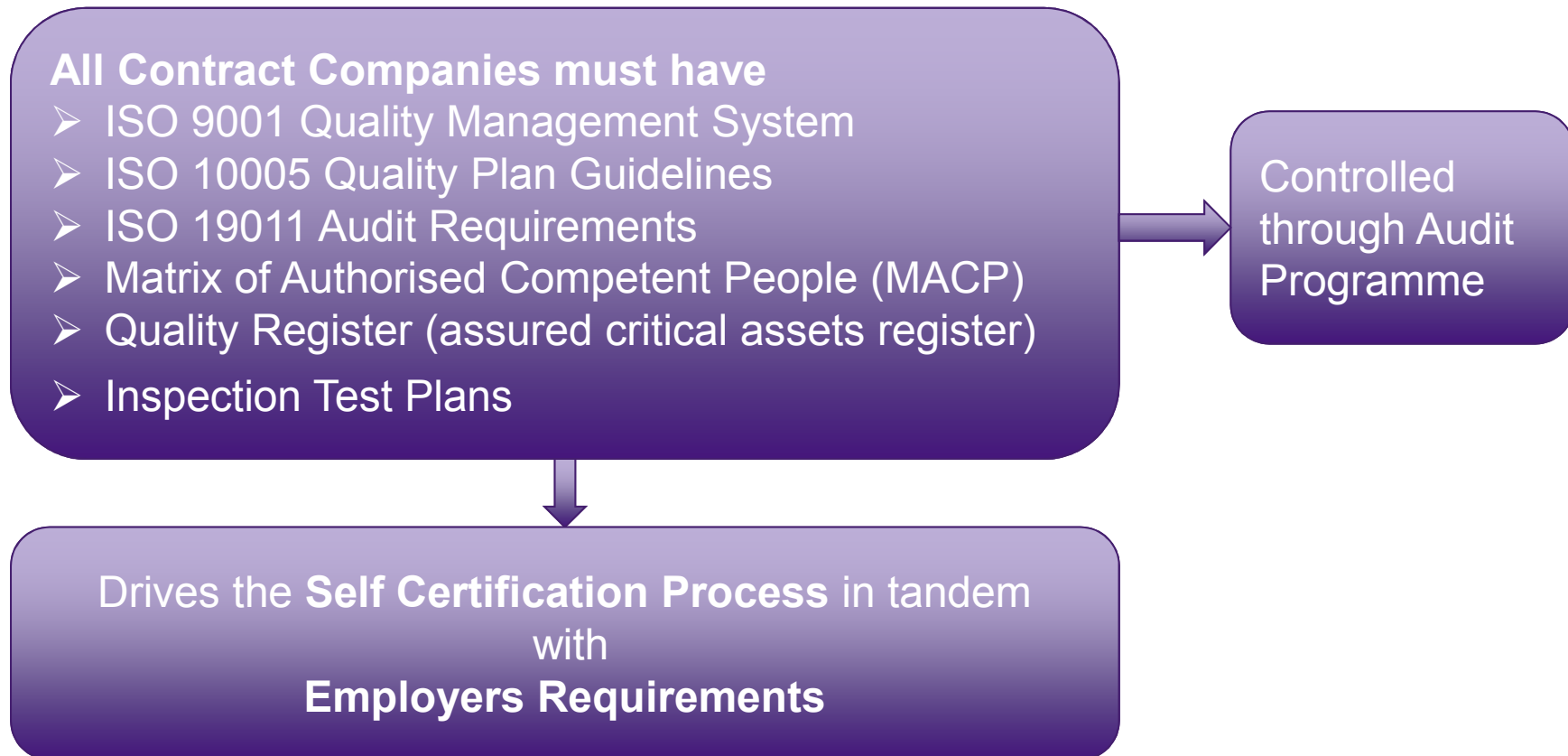
- TENDER INCLUDED A “SUPPLIER BEHAVIOURAL ASSESSMENT”

ONGOING ASSESSMENT

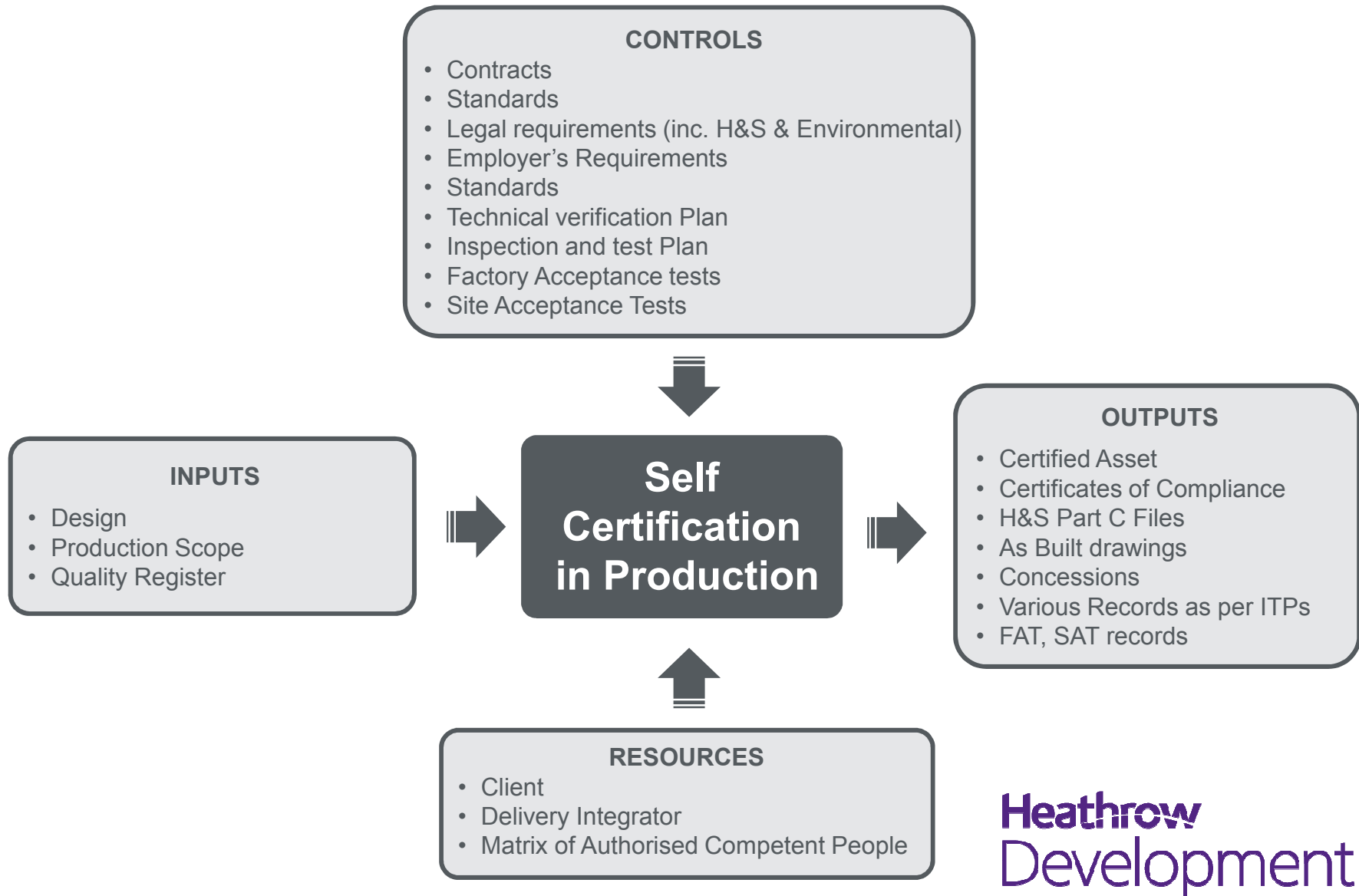
- HEATHROW AND THE SELECTED PARTNERS UNDERTOOK REGULAR COLLABORATIVE SURVEYS
- SUPPLEMENTED BY 360 DEGREE SURVEYS AND INTERVIEWS (TOTAL OF ALMOST 9000 SETS OF DATA)

PRINCIPLES OF COLLABORATION

- A Quality Framework set out which defined the way in which Partners were selected – the framework structure to allow Heathrow to be a capable owner

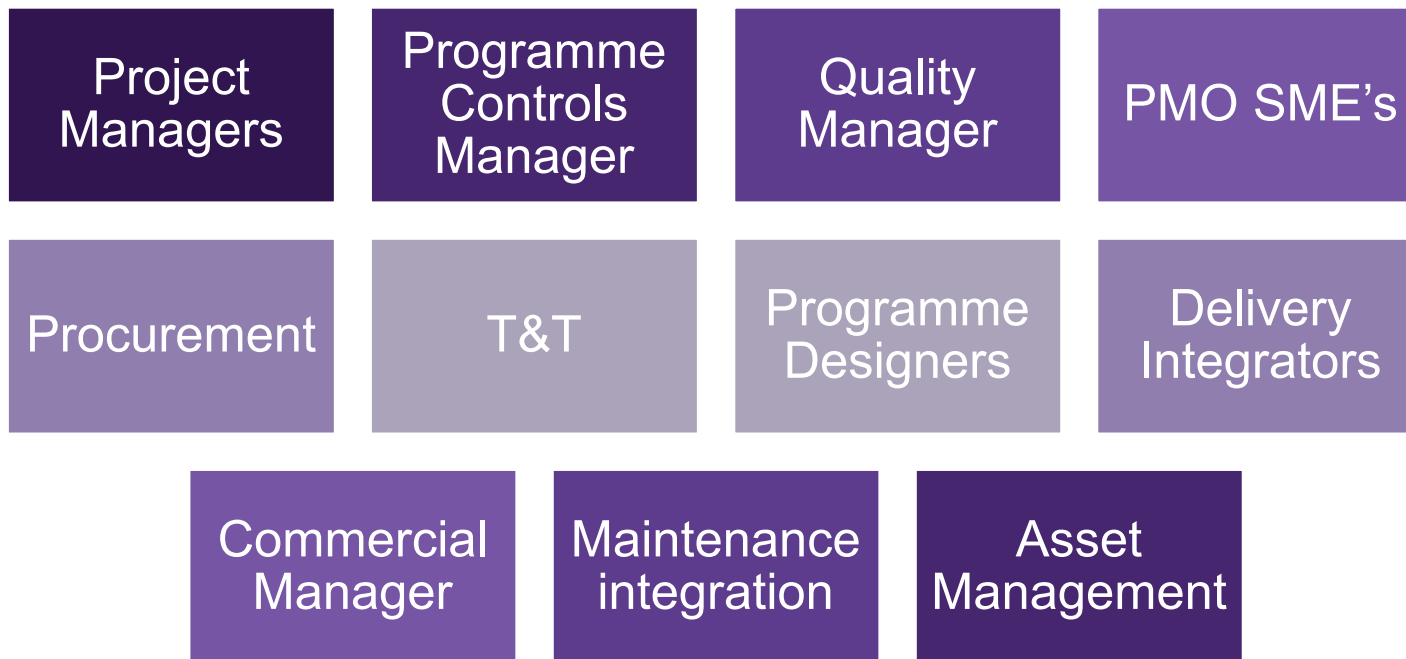


SELF CERTIFICATION PROCESS - DELIVERY



PROCESS DEVELOPMENT – COLLABORATIVE APPROACH

To support this the Heathrow Gateway Lifecycle was developed – this utilised collaboration partners / contractors



Annual 2 day review of process with all of the above as part of Continuous Improvement – validation of process

Heathrow
Development

KEY FINDINGS 2014-2015

- THINGS HAVE DEFINITELY IMPROVED SINCE END OF 2014
- LESS FRUSTRATION, NO TALK OF 'BATTERED AND BRUISED' ANYMORE
- TEAM ARE WORKING TOGETHER MUCH MORE EFFECTIVELY
- GOOD WORKING RELATIONSHIPS WITHIN OWN PROGRAMME AND DELIVERY TEAMS
- STAKEHOLDER ENGAGEMENT IS BETTER, PEOPLE ARE MORE ON-BOARD
- TRANSITION IS SMOOTHER THAN PREVIOUSLY (BUT STILL THE BIGGEST CHALLENGE

Collaboration Blockers

- Behaviours revert to supplier / customer
- Contractual Behaviour creeps in
- Trust reduction from HAL to Suppliers when things don't go right
- Over “processize” the delivery leading to treacle progress
- Lose common sense

Heathrow

Making every journey better

Driving Collaboration

How it happens best; theory in
action

The back story

- E17; LB Sutton; SE Essex
 - Football, Carpenter & an MBA
 - Mace & Business improvement
 - “Man of Men”
-

Cook's tour of

- Scenarios
 - The ideal model: hard polarity
 - The ideal model: soft polarity
 - Reprise
 - Any Questions?
-

Scenarios

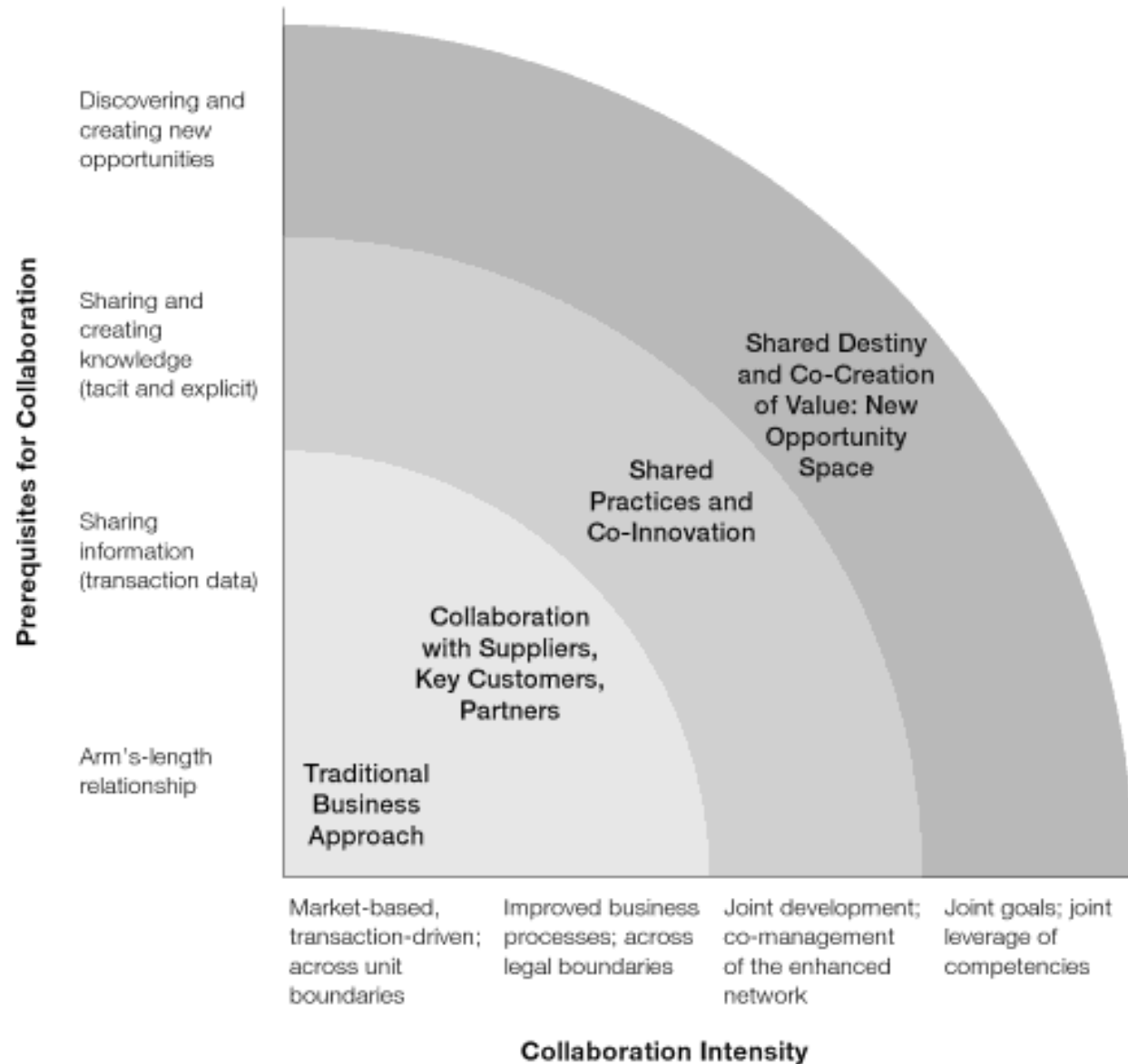
Business model

- ROI Horizon: Limited project enterprise orientation
 - Sale: Transactional
 - Objective: Realise the physical asset
 - Key driver: Avoid cost & time overrun
 - Supply Chain: Integral to product development
-

Business model

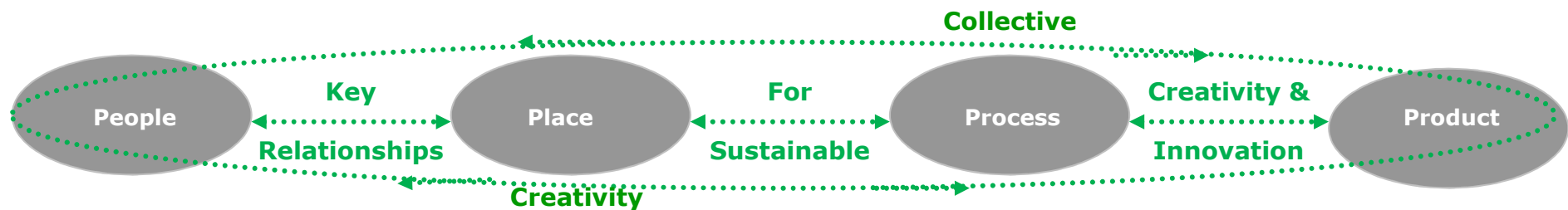
- ROI Horizon: Sustainable business orientation
 - Sale: Relational
 - Objective: Realise, develop & maintain interest in physical asset
 - Key driver: Generate knowledge & opportunity
 - SupplyChain: Integral to customer delivery & experience
-

Co-creation of value



The ideal model: 'Hard polarity'

Collective creativity

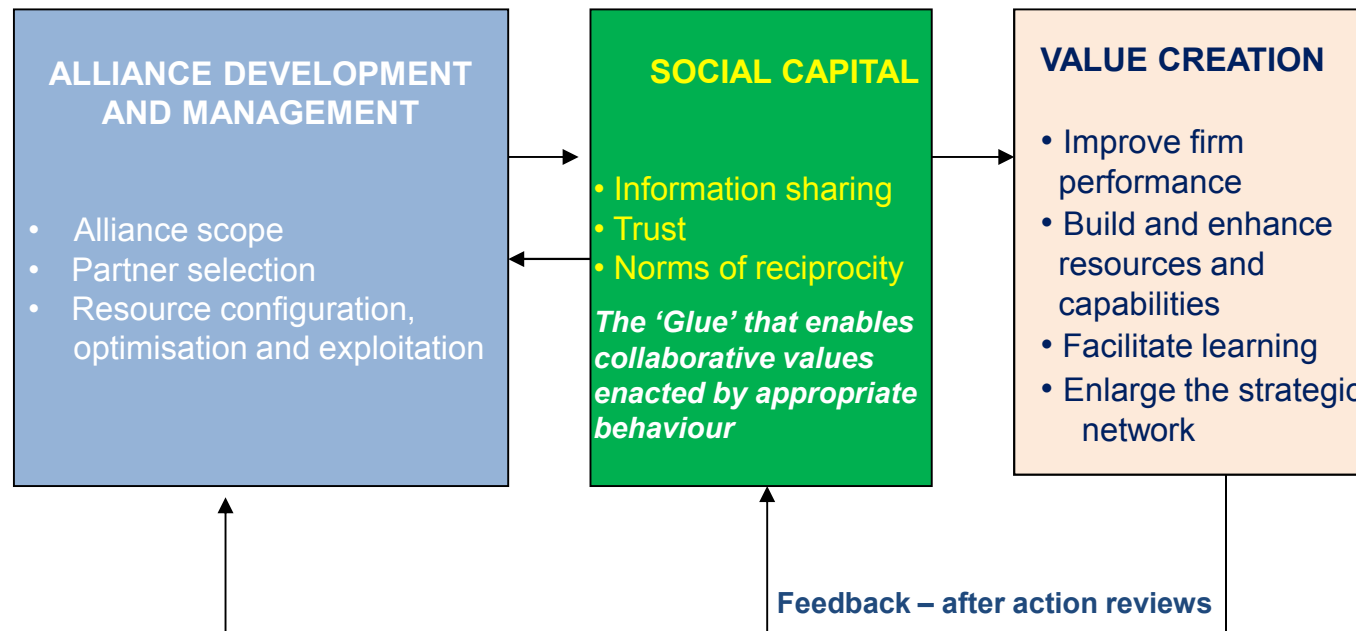


(Rhodes, 1961)

Formal agreements

Informal agreements

Outcomes



(Hitt et al, 2003)

Core reasons

- No single organisation possesses, or has access to, all the requisite resources (human, technical, financial, etc.) to bring a new product or service to fruition
- Political concerns can be alleviated
- Alliances may help partners share risks

(Hamel & Prahalad, 1994)

Place

- Co-located
 - Conducive for sharing
 - Enhance well-being
-

How the 'Glue' works



Process

- BIM
- VDC
- Last Planner

The ideal model: 'Soft polarity'

Collaborative approach

- Provide a vision and sense of mission
 - Use of symbols & emotional appeals to focus group members to achieve more than self-interest; team spirit promoted
 - Supports people to try new approaches and develop innovative ways of dealing with challenges
 - Leader's act as coaches and advisors encouraging self-actualization; they walk-the-talk
-

Collaborative approach

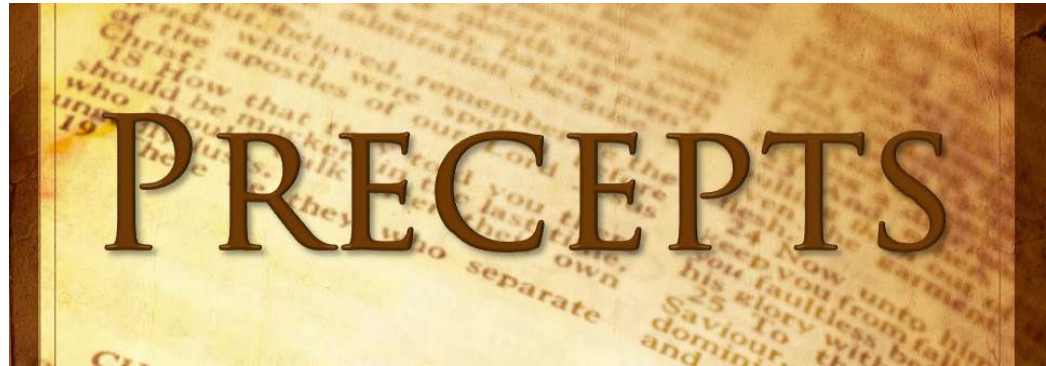


The 'compass points'

- Pluralism
 - Interdependency
 - Participation
 - Openness
 - Continuous Improvement
-

The enablers

- Curiosity
- Forgiveness
- Inclusion
- Play by the rules



The 'Rules'

- State views; ask genuine questions.
 - Share all relevant information.
 - Use specific examples and agree on what important words mean.
 - Explain reasoning and intent.
 - Focus on interests, not positions.
 - Test assumptions and inferences.
 - Jointly design next steps.
 - Discuss un-discussable issues.
-

Reprise

Appreciate and understand:

- It's about co-creating value
 - Collective creativity is central throughout
 - Alliances require 'Glue' for value creation
 - Motivational Leadership
 - Guiding values
 - Morale behaviour
 - It's no one thing ...but the sum of the parts
-

Any questions please?

Improving Quality Through Collaboration

2nd Tier Contractor Perspective

Bethany McCulloch - Head of Quality
Careys Civil Engineering

Careys

- Self delivery model

Building collaboration

- Counselling for toads
 - Walking the walk
 - Life as a tier 2 contractor
-

Careys Civil Engineering



Overview

- Established in 1969
- Operating from 7 offices across UK and Republic of Ireland
- 3500+ operational managers and operatives
- 2018 / 2019 Group target turnover of £650m
- 90% self delivery

Specialising in

- Enabling & Infrastructure
- Basements & Substructures
- Superstructures
- Hard & Soft Landscaping

Primary Sectors

- Commercial
- Residential & Regeneration
- Hotel, Arts & Leisure
- Industrial & Technology
- Public
- Retail
- Energy and Waste

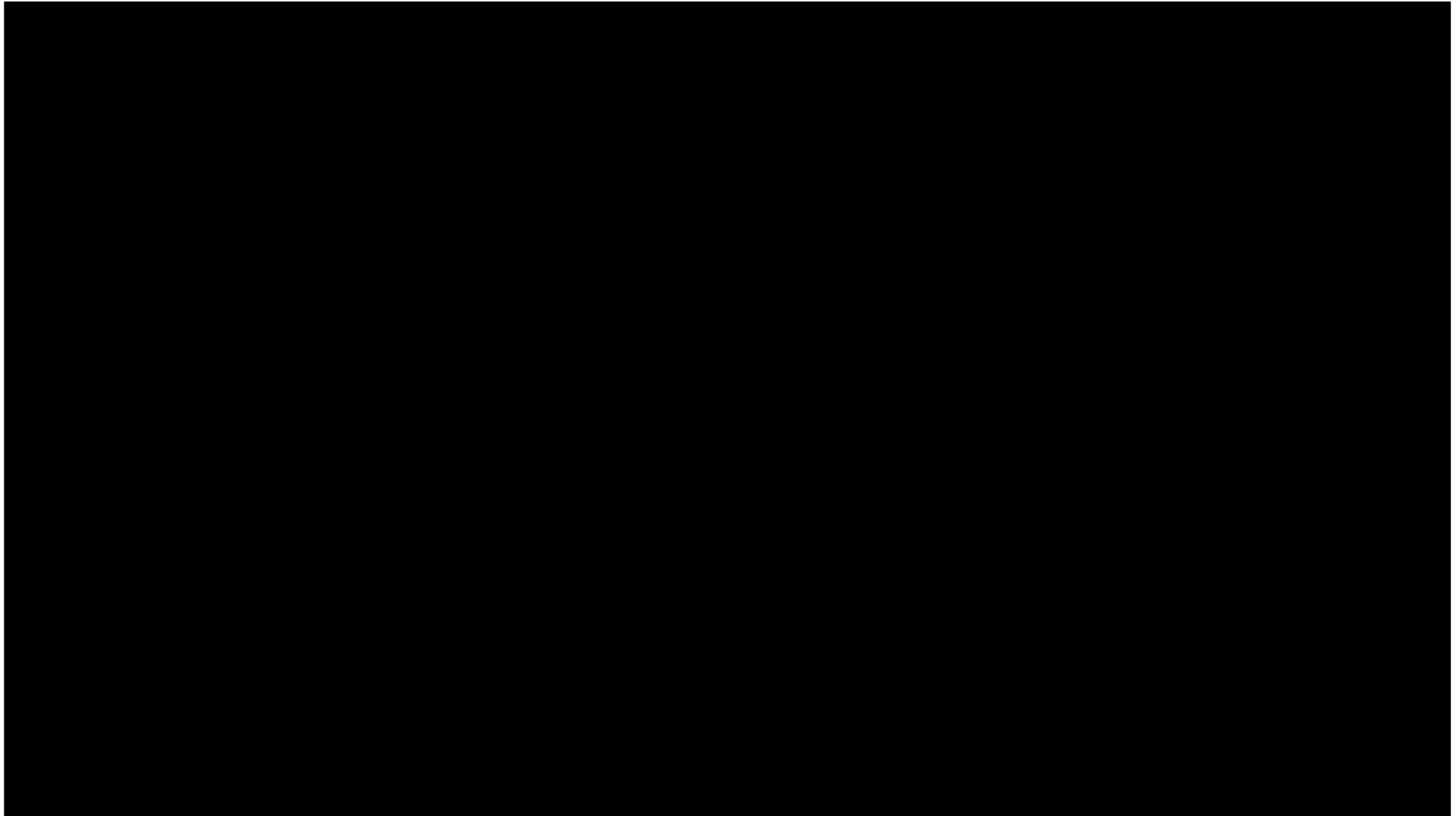
CAREYS
Civil Engineering
A Careys Group Company



Careys self delivery model:

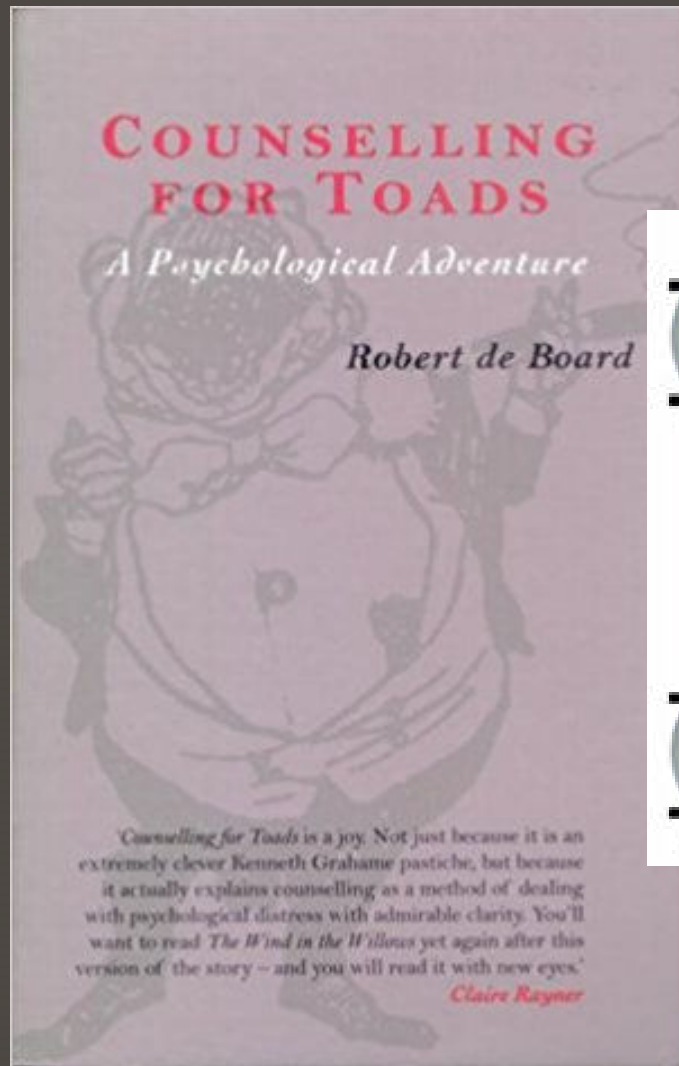


British Museum

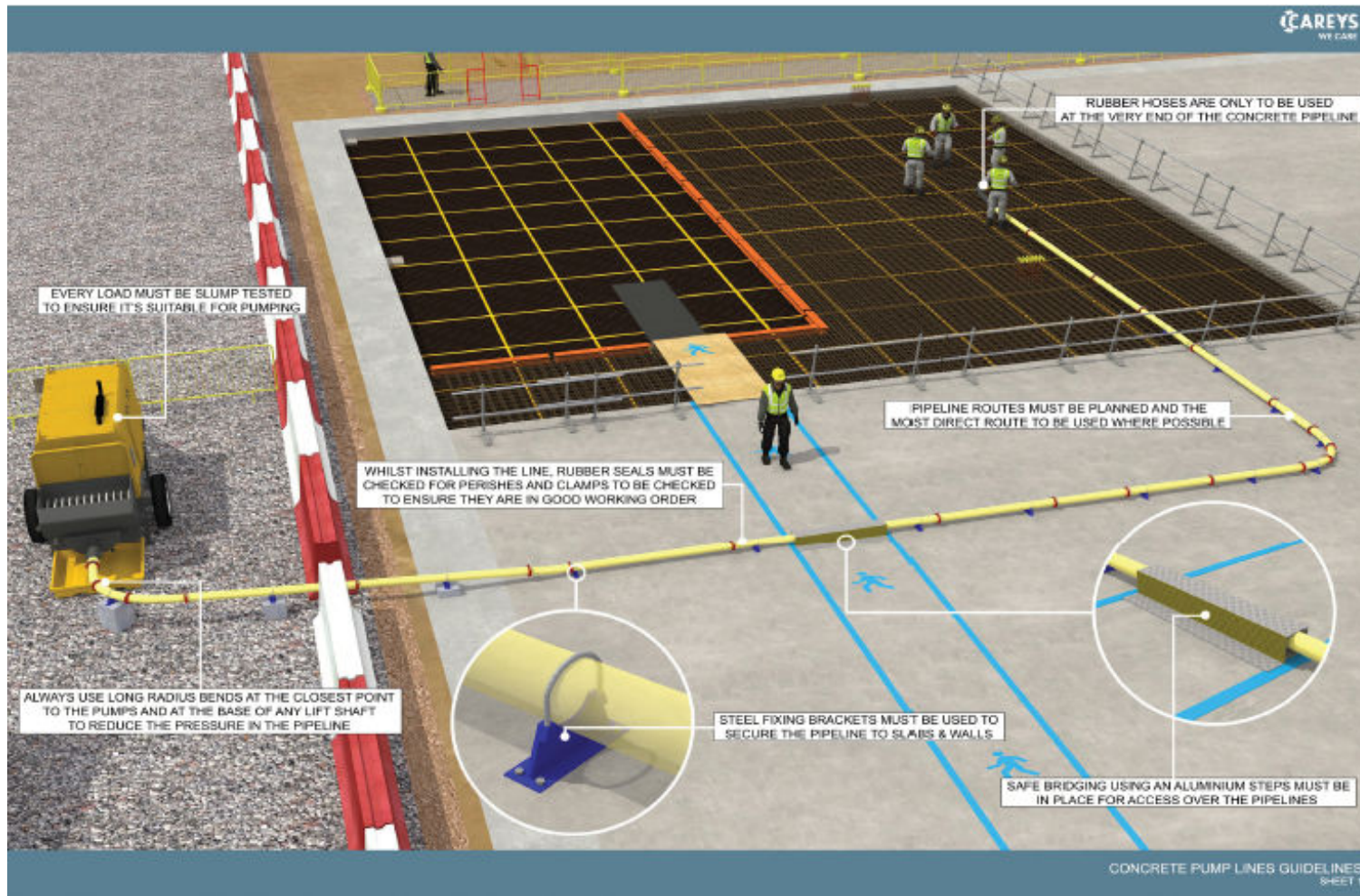


Building collaboration

Transactional Analysis



Walking the walk



Notes

Remember!

All concrete pipe lines and accessories must be inspected on arrival to site to ensure they are in good working order.

Any defective pipes should be sent away from site immediately.



Thank you for listening



**help us
help you**



- Website
 - Consig.org
 - LinkedIn
 - The Chartered Quality Institute
 - CQI Construction Special Interest Group
<https://www.linkedin.com/groups/4698737>
 - Twitter
 - @CQIConSIG
 - Tonight
 - #consigIQTC
-

Q & A Session

This is your opportunity to ask questions on:

- This evening's topic
- Construction quality management
- Personal professional development
- CQI matters

Thank you for coming

We look forward to seeing you at our next
event

<https://www.quality.org/content/sig-registration-form>

Feedback: cqiconsig@gmail.com