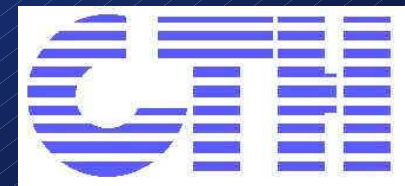
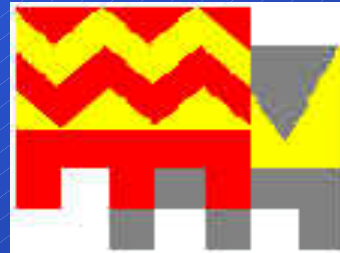




Interactive **M**odel for **M**easuring
PRE-assembly and **S**Tandardisation
benefit across the construction
supply-chain

Collaboration

STANHOPE



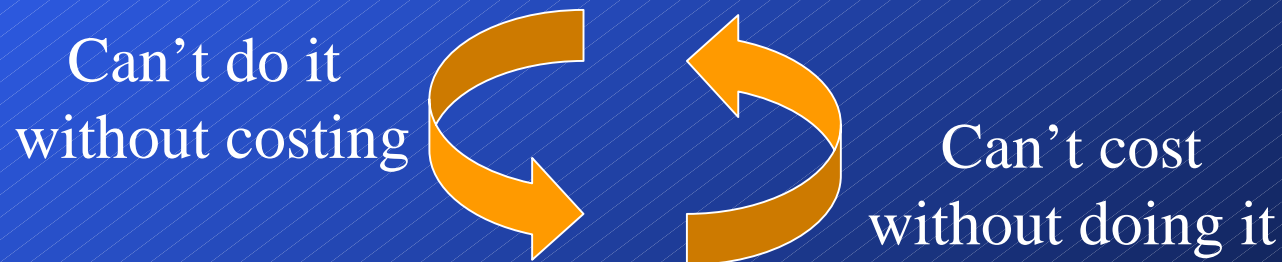
Why produce and assemble off-site?

- In UK pressure from **Government** initiatives
- Client demand for better **performance**
- Severe shortages of skilled and unskilled site **labour**
- Sometimes it is the only solution e.g. space and access problems

BUT, uptake is not as widespread as it could be

Barriers

- Biggest barrier to implementation is the traditional reliance of decision making on **cost**.
- Also an inability to make necessary changes existing design & construction **management** processes



Counter argument:

Decision making by cost alone is not helpful because:

- Cost reconciliation is a **lagging** indicator;
- Cost is an **unreliable** forecasting tool;
- Cost usually means first cost or direct cost and frequently **fails** to recognise process e.g. Lean concept of waste, or **soft performance issues** (value related)

What is currently measured and costed?

- The cross-case analysis shown in Table 1 indicates how shallow the measurement and cost process is.
- It generally focuses on simple, hard measures such as labour, materials and transport.

Measurement - Quantitative/Qualitative

HARD MEASURES



Financial - can be compared to other benefits/costs

Non-financial – Quantitative measure or numeric scale – not subjective assessments

Non-financial – Qualitative measure or verbal/ descriptive scale - subjective assessments

SOFT MEASURES

Measurement – Type of Data

DIRECT MEASURES

Information easily available – project data can be used directly

Information obtainable – requires some analysis of project data

Information incomplete – project data doesn't tell the whole story

INDIRECT MEASURES



Measurement - Concepts

SIMPLE MEASURES



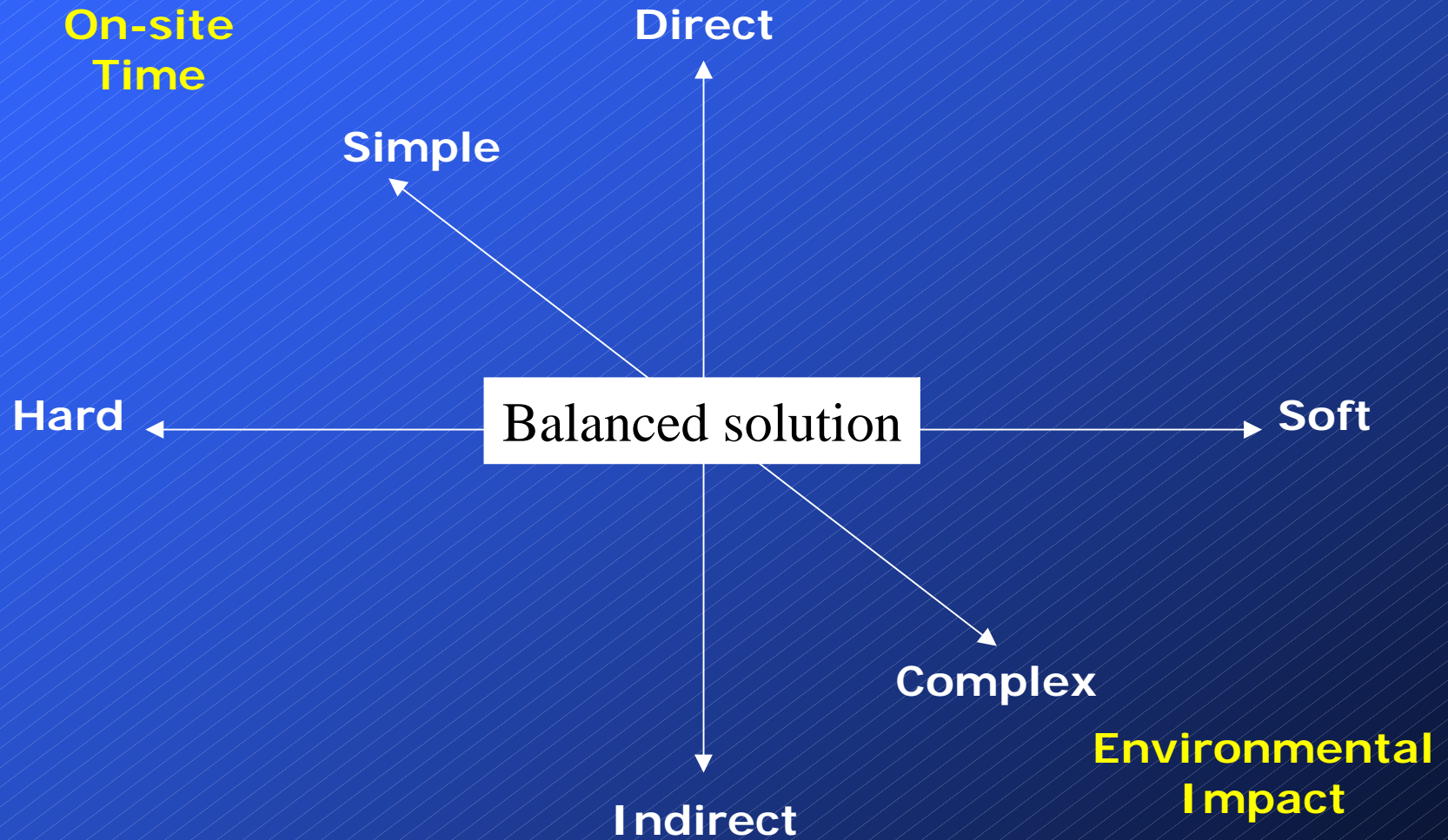
Concepts are familiar and used regularly within the construction industry – e.g. cost, time, quality

Concepts used less regularly within the construction industry – e.g. environment and sustainability

Concepts rarely used within construction but used in other industries – e.g. people and aesthetics

COMPLEX MEASURES

How to Measure



IMMPREST's answer

Tackles the barriers to deeper consideration in decision making by clearly identifying the benefits associated with Pre-assembly and indicating the pitfalls on a project by project basis.

Decision making supported by a tool that identifies :

✓ **Drivers:**

Factors that will be of benefit to the project/client/company

x **Constraints:**

Factors that represent barriers and hazard to project/client/company

Drivers & Constraints

- Table 3 lists those factors that drive or constrain and are specific to, the use of pre-assembly.
- The decision as to whether pre-assembly is appropriate to the project will depend on the varying importance and impact of these factors.
- Every project should start from the premise that it is to be pre-assembled and the evaluation exercise is then undertaken to ascertain what can not be pre-assembled
- To make the design decisions the other way round severely reduces the chances of successfully pre-assembling

Selecting Drivers

- A major factor in making the appropriate decision was restricting the number of drivers that could be selected.
- It is necessary to force the team to recognise that giving all drivers equal status removes the need for a decision

The importance of Constraints

- Identifying those aspects that may constrain the project and prevent the process from working effectively (risks)
- Ensuring **action** is taken to disable or mitigate the constraints
- This recognises that decisions are more frequently made in response to perceived “pain” rather than to obtain benefit (avoiding pain is a powerful motivator for action!)

Conclusion

- Evaluation in this way increases awareness of value by broadening the measurement process beyond simple, hard issues
- Evaluation that follows a consistent approach enables future learning and improvement as it reveals successes and failures

IMMPREST overview

Comprises 3 “tools”:

- Toolkit A is information & background
- Toolkit B operates at project strategy level focusing on the project drivers
- Toolkit C provides detailed elemental evaluation of benefit