Benefits from Integrated Project Control System

A) Consistent Programme information

B) Improved Capital Management programme

C) Procurement data leading to ….

D) Establishing Appropriate Procurement strategy

E) Drawing register, linking to …

F) Quality System

G) Requisition lists and monitoring of orders and deliverables

H) Resource Management

I) Standardisation of Processes

J) Ease of preparation of Bids

K) Improvement of Life Cycle Costing

L) Improved Management of Asset (make the Assets sweat and work to the maximum)

M) Flexibility in definition of project scope

N) Completion of Project Cycle with feedback on New work and timing

O) Generation of site History records

P) Knowledge Based Organisation / System

Q) Improved financial information (generation of cash flow information for improved use of Capital)

R) Improved utilisation of resources (human and other)

S) Using RFI to improve:

- Information flow (no mistakes)
- Identification of project data
- Identification of project equipment
- Monitoring of various processes from time-recording, to delivery of equipment on site, to invoicing
- Procurement and storage facilities
- Linked to appropriate software it could bring to a full circle the feedback for initiation of new project(s)

T) Standardisation of equipment

U) Standardisation of drawings

V) Improved Document Management will improve Management and monitoring of Contracts

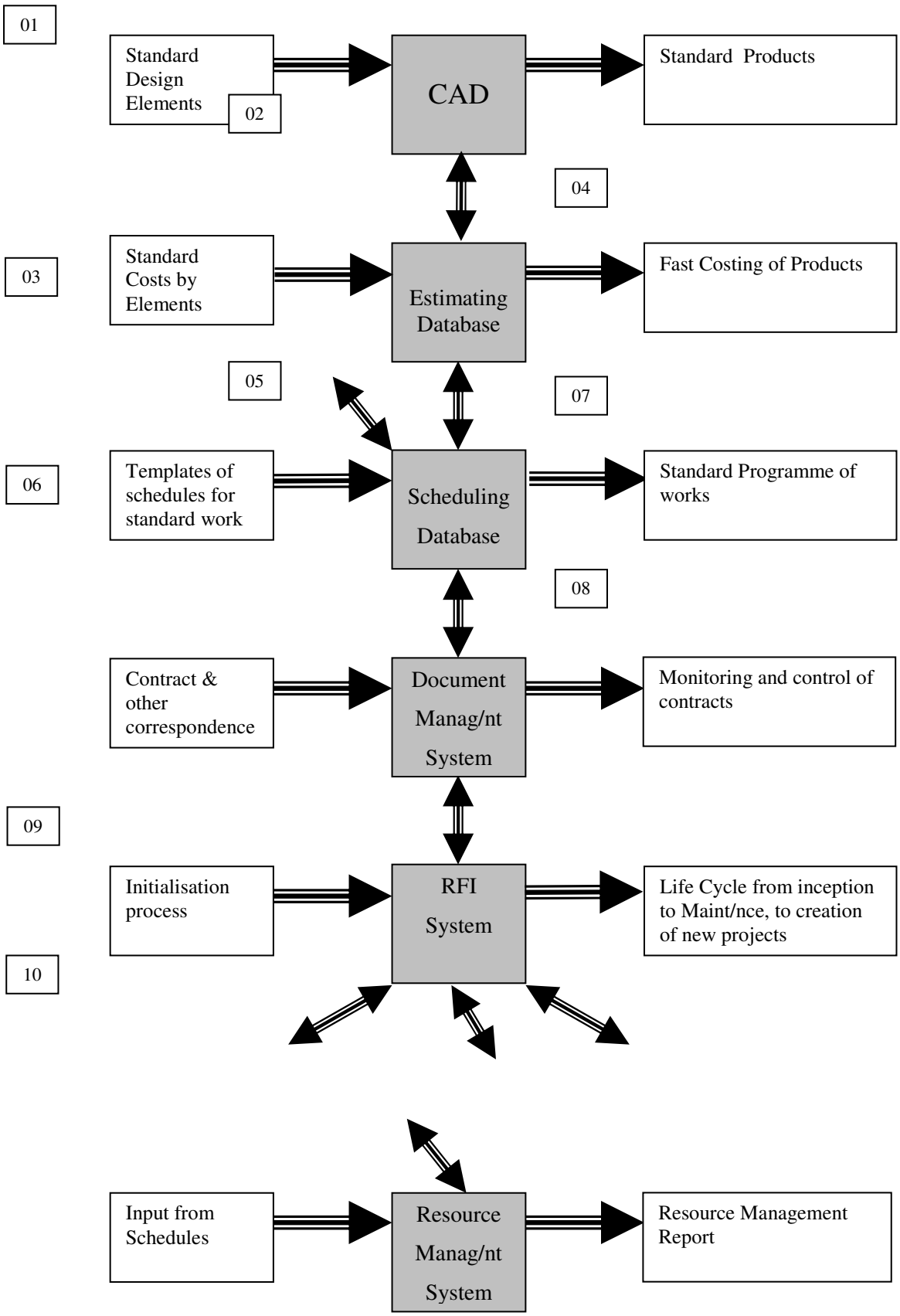
The diagram on page 3 is an initial map of the overall system and the interactions between the various systems/software tools.

Boxes in 'grey' indicate the system/software tools and have been identified by a letter in order to show, in some cases, inter-connectivity (e.g. the 'Barcoding system').

Boxes on the left indicate the input(s), and the boxes to the right indicate the output(s).

The 'numbered boxes' indicate notes against the input, the system, or the inter-connection, and these notes are on page 5.

Initial map of the Overall System



Note 1

Standardisation of design is introduced by Standard Design Elements, which are available in the CAD library.

Note 2

CAD operator selects Standard Design Elements from the library.

Note 3

Standard Design Elements are comprised of a number of Cost Elements.

Note 4

The link between the CAD system and the Estimating Database is via the Standard Design Elements.

Note 5

Design, Procurement and estimated Construction durations are included in the Standard Design. This information is then fed into the Scheduling database

Note 6

Templates of schedules thus are create (or could even exist) in the scheduling database.

Note 7

The schedule has a Work Breakdown Structure (WBS) which at a certain level links to the Cost Breakdown Structure (CBS) - linking the scheduling and the estimating databases.

Note 8

Transfer of contract information (e.g. delivery dates, etc.) from the scheduling tool to the document control system, and via-versa.

Note 9

An RFI which contains all relevant information is allocated to a project, as soon as this has been identified and work commences.

Note 10

All information regarding the project, from costs (man-time, contracts, orders, etc.), to numbering of drawings, tagging of equipment, etc. is collated by reading the RFI.

For example when a CAD operator commences work on a drawing for the particular project all he/she will have to do is run a sensor across the RFI (which should be available). The drawing is then automatically taking the project number/bar-code. The operator indicates the work package for which he is preparing the drawing. The system identifies the operator and the WBS code/activity for which time is spent and the system clock starts counting the time spent on the drawing. On completion the timesheet system automatically is updated. At the end of the day the time spent on the activity is transferred from the timesheet system to the scheduling tool (as actual).

As the drawing progresses and equipment are identified in the drawing, data about the cost and the specification is transferred to the appropriate databases. For example, by identifying a pump of certain characteristics data from the procurement/materials databank about the approximate cost, the supplier(s), the estimated delivery, etc. are transferred to the appropriate tools, (scheduling tool, requisition listings for compiling the order, the estimating tool for integration in the cost element, etc.).

Then at the other end – construction phase – as material arrive on site, with the appropriate RFI, information about payment(s), installation and monitoring of the items in the Asset Management System is again fed to the appropriate databases (scheduling for progress and actual cost, invoicing/account system, maintenance cycle begins).