



# **BESPOKE MULTI-TRADE ESTIMATING AND VALUATION OVERVIEW**

## **Author**

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## **Technical Background**

The Estimating and Valuation System is written in Microsoft Access.

Access is a database program which allows information to be stored in tables, processed using queries and presented on screen in forms and on paper as reports.

Access is part of a suite of programs called Microsoft Office; other better known parts include “Word” the word processor and “Excel” the spreadsheet. Information contained in an Access Database may be imported directly into both “Word” and “Excel”.

For improved performance and better reliability Access programs are normally split into two parts. The tables of information which are mounted on a Server is usually called the “Back-end” and the queries, forms and reports which are mounted on each users computer is usually called the “Front-end”.

Together the “Front-end” and “Back-end” components produce a multi-user database which allows information to be shared and modified by a group of users on a local area network.

Access may be used to develop quite complex applications such as estimating, costing and invoicing systems.

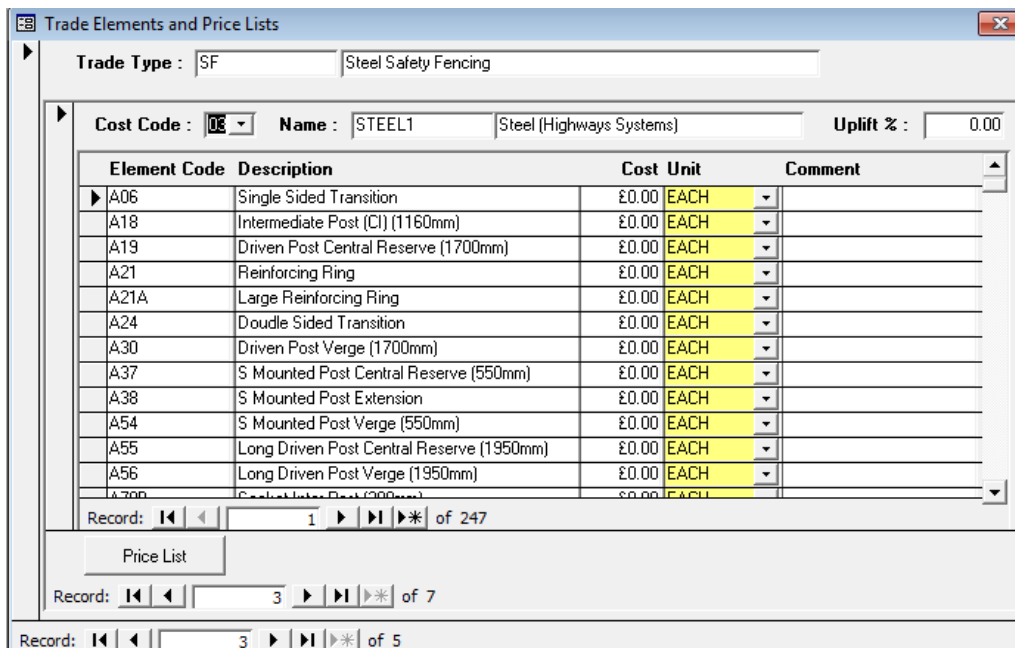
## **Program Operation**

All systems are written as a series of forms and reports that are accessed from a main menu or ‘Switchboard’ as shown overleaf.

Any item may be selected by a single-click. Items marked with ‘>>>’ lead to a sub-menu while those without lead directly to a form or a report.



A form contains a view of one or more tables of data in the program. For example, the form below describes a Library Entry consisting of a Header containing a Type and Description linked to a Footer containing a Cost Code with underlying Elements.



There are three sets of Record Selectors to navigate between records. The outer set allows movement from one Trade Type to another while the inner set allows movement from one Cost Code to another.

The innermost set allows the movement up and down a list of Steel Elements.

It is important to understand the operation of nested Record Selectors.

In addition to being able to move from one record to the next forwards and backwards the Selectors allow you to jump to the first or last record and to open a new record to type in fresh information.

Information is saved as it is entered on screen and it is normal to fill in all boxes proceeding from the top left to the bottom right using the Tab key.







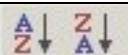






In certain cases a value will already be present in a box; this is called the default value. In other cases it will be possible to leave a box blank but it is usually good practice to put something in at each stage if only “None”.

Where entry to a box is compulsory attempting to move to the next record or close the existing one will produce an error and the missing information needs to be entered before the record or form can be satisfactorily closed. Some boxes require information to be entered in a certain format e.g. a date (01/01/2010) or to be a number (2.50) or is formatted into capitals none (NONE). Failure to enter information in the correct format will produce an error which needs to be corrected before the record can be saved.

Some boxes (combo) have an arrow on the right hand side; by pressing the arrow a list of possible options can be displayed and selected from. Such boxes normally need one of the list to be entered otherwise an error will be displayed and reselection is required. Typing a single letter before pressing the arrow will give the list beginning with that letter.

If the combo box is yellow (for example Units on the previous page) by double-clicking on the yellow area a new form appears that allows an additional unit to be entered.



	<b><u>Undo</u></b> Undoes last operation.
  	<b><u>Filters</u></b> This allows all records to be filtered by a member of a drop down box.
	<b><u>Go to First Record</u></b> Moves to first record.
	<b><u>Go to Previous Record</u></b> Moves to previous record.
	<b><u>Sort</u></b> Sort in ascending or descending order.
	<b><u>Go to Next Record</u></b> Moves to next record.
	<b><u>Go to Last Record</u></b> Moves to last record.
	<b>Cut</b> }
	<b>Copy</b> } Standard Windows Routines
	<b>Paste</b> }
	<b><u>Delete Record</u></b> Deletes current record, confirmation is requested. Where a record is linked to other records in a set of tables many records may be deleted.

## Components of the System

The system is made up of four parts:

A: A Common Database containing all the information on Estimates and Applications which is mounted on a server and shared by all the users.

B: An Estimating Program which is mounted on each PC whose user logs enquiries and prices work. Such information is recorded in the Shared Database.

C: A Valuation Program which is mounted on each PC whose user records work carried out and raises Applications for Payment. Such information is recorded in the Shared Database.

## Entering an Enquiry

The following form is used to enter an enquiry against one or more potential clients. The Enquiry is given a reference number (091007) and each client appends a letter (091007A)

The screenshot displays the 'Invitations to Price' application window. The interface includes several fields and sections:

- Department:** ALL (dropdown), Saferoad BLG
- Invitation Reference:** 091007
- Site:** WEDERS SITE
- Area:** EAST (dropdown), Eastern Region
- Sector:** NEW (dropdown), New Build
- Clients/Comments:** A tabbed section with 'Clients' selected.
- Client Details:**
  - Client Prefix:** A (dropdown), 5
  - Date Received:** 22/11/2009
  - Date Due:** 22/12/2009
  - Their Reference:** NONE
  - Returned By:** POST (dropdown)
  - Client:** AA NE (dropdown), Allenbuild Ltd
  - Action:** PRICE (dropdown)
  - Address:** Phoenix House, Hawthorne Park, Coal Road, Leeds, LS14 1PQ
  - Contact:** Chris Royston (dropdown)
  - Position:** Senior Estimator
  - Salutation:** Dear Sirs
  - Tel:** 0113 2375 600
  - Fax:** 0113 2375 601
  - Mobile:** 07789003454
  - E-Mail:** fred.bloggs@somewhere.com
  - Initials:** JRS (dropdown), John Smith
  - Director:** (text field)
- Buttons:** Client Details, Decline Letter
- Record Navigation:** Record: 1 of 2 (with navigation icons)

For each client only two actions exist, selecting “DECLINE” allows a standard Decline Letter to be produced while “PRICE” passes the Client Enquiry through to pricing.

## Pricing an Enquiry

The following form allows a number of pricing attempts of any Client Enquiry. The Client Ref (e.g. 091007A) is selected which brings forward the enquiry from Client A to the pricing system.

The screenshot shows a software window titled "Estimates and Quotations". The form contains the following fields and values:

- Client Ref :** 091007A
- Our Ref :** 091007A.5
- Site :** A52 Borrowwash Bypass, Spondon
- Their Reference :** wedr4567
- Area :** EAST (dropdown), Eastern Region
- Sector :** NEW (dropdown), New Build
- Status :** PRICE (dropdown), Being Estimated / Quoted
- Date Due :** 22/12/2009
- Date Returned :** (empty)

Navigation tabs include: Clients, Sections, Pricing, Quote Letter, Quote Assumptions, Contract Terms & Conditions, Comments.

Client details:

- Client :** AA NE (dropdown)
- Name :** Allenbuild Ltd
- Address :** Phoenix House, Hawthorne Park, Coal Road, Leeds, LS14 1PQ
- E-Mail :** fred.bloggs@somewhere.com
- Contact :** Chris Royston (dropdown)
- Position :** Senior Estimator
- Salutation :** Dear Sirs
- Tel :** 0113 2375 600
- Fax :** 0113 2375 601
- Mobile :** 07789003454

Initials: JRS (dropdown), John Smith, Director

Buttons: Quotation, Bill of Quantity, Tender Bill, Summary.  Use as Main

Record: 14 | 3 | of 3

The next step is to create one or more bill sections into which bill items will be entered of a particular trade type (e.g. 0400 and SF).

Bill items can be entered individually or copied over from another Bill Section. This method allows an initial pricing to be carried out and then a second which is initially a copy of the first which can then be changed.

If bill items are entered individually from the Library of Standard Items they are taken from that part of the Library that contains, for example, safety fencing items.

It is a restriction of the program that items in the same bill section cannot be of different trade types. E.g. you cannot mix safety fencing and general fencing in the same section.

Estimates and Quotations

Client Ref : 091007A Our Ref : 091007A.5

Site : A52 Borrowwash Bypass, Spondon Their Reference : wedr4567

Area : EAST Eastern Region Date Due : 22/12/2009

Sector : NEW New Build Date Returned :

Status : PRICE Being Estimated / Quoted

Clients Sections Pricing Quote Letter Quote Assumptions Contract Terms & Conditions Comments

Heading	Description	Our Ref	Section	Trade Type
0400	Safety Fencing	NONE	NONE	SF
*		NONE	NONE	

Item Pricing Copy Items Quotation

Bill of Quantity Tender Bill Costs Bill Cost Detail

Record: 1 of 1

Initials : JRS John Smith Director

Quotation Bill of Quantity Tender Bill Summary Use as Main

Record: 3 of 3

Once the bill sections have been added the Pricing assumptions are set prior to items being appended to each section. This is done using the form below.

Estimates and Quotations

Client Ref : 091007A Our Ref : 091007A.5

Site : A52 Borrowwash Bypass, Spondon Their Reference : wedr4567

Area : EAST Eastern Region Date Due : 22/12/2009

Sector : NEW New Build Date Returned :

Status : PRICE Being Estimated / Quoted

Clients Sections Pricing Quote Letter Quote Assumptions Contract Terms & Conditions Comments

Code	Name	Cost Description	Price List	List Description	Uplift %
01	LABOUR	Labour	STANDARD	Using Standard Costs	0.00
02	PLANT	Plant	STANDARD	Using Standard Costs	0.00
03	STEEL1	Steel (Highways)	STANDARD	Using Standard Costs	0.00
04	STEEL2	Steel (Flexbeam / Vetex)	STANDARD	Using Standard Costs	0.00
05	CONCRETE1	Concrete 1	STANDARD	Using Standard Costs	0.00
06	CONCRETE2	Concrete 2	STANDARD	Using Standard Costs	0.00
07	MISC	Miscellaneous	STANDARD	Using Standard Costs	0.00

Review Elements Preview Elements

Record: 1 of 7 Margin % : 0.00

Initials : JRS John Smith Director

Quotation Bill of Quantity Tender Bill Summary Use as Main

Record: 3 of 3

Each Safety Fencing item contains elements of Labour, Plant, Steel and Miscellaneous which are pre-entered into a Standard Item. The element costs may have a price list associated with them or be priced at a standard cost.

Price lists may be set at the beginning of the pricing process and changed at any time as can across the board Uplifts and Margin.

Review Elements allows a unique list of elements to be displayed with the option to adjust the individual prices within this Estimate Only.

Preview Elements allows lists of elements of a given type to be displayed in a report format.

The Items are displayed in the form below.

**Item Pricing**

Site: A52 Borrowwash Bypass, Spondon      Section: Safety Fencing  
 Heading: Central Reserve

Item: 01      Item Code: DB100      Quantity: 500.00  
 Name: UTDSOBB      Centres: 1.00      Unit: NO  
 Description: Untensioned Double Sided Open Box Beam, straight or curved exceeding 120m radius      Comments:

Cost Code: 06      Name: STEEL1      Steel (Highways Systems)      Uplift %: 0.00      Override Multi 1: NO

Element Code	Booked To	Cost Unit	Multipliers	Uplift	Ext. Cost
F06	QUANTITY	£0.51 EACH	500.0000 2.0000 1.000 1.000 1.000	0.00	£510.00
F04	QUANTITY	£0.51 EACH	500.0000 1.0000 1.000 1.000 1.000	0.00	£255.00
B78	QUANTITY	£137.46 EACH	500.0000 2.0000 1.000 1.000 1.000	0.00	£137,460.00
B12	QUANTITY	£7.79 EACH	500.0000 2.0000 1.000 1.000 1.000	0.00	£7,790.00
B03	QUANTITY	£113.27 EACH	500.0000 2.0000 1.000 1.000 1.000	0.00	£113,270.00
B22	QUANTITY	£2.69 EACH	500.0000 2.0000 1.000 1.000 1.000	0.00	£2,690.00
M16x50 Set					
<b>Total Cost :</b>					<b>£261,975.00</b>
<b>Unit Cost :</b>					<b>£523.95</b>

Record: 1 of 6

Record: 3 of 7

	Gross Cost	Uplift	Nett Cost	Unit Cost
01 LABOUR	£6.90	0.00	£6.90	£0.01
02 PLANT	£300.00	0.00	£300.00	£0.60
03 STEEL1	£261,975.00	0.00	£261,975.00	£523.95
04 STEEL2	£0.00	0.00	£0.00	£0.00
05 CONCRETE1	£0.00	0.00	£0.00	£0.00
06 CONCRETE2	£0.00	0.00	£0.00	£0.00
07 MISC	£0.00	0.00	£0.00	£0.00

Std Cost / Additions : £0.00  
 Margin % : 0.00

Total Cost : £262,281.90  
 Unit Cost : £524.56  
 Margin : £0.00  
 Additions : £0.00  
 Rate : £524.56

Preview Item 1      Preview Item 2

Record: 1 of 1 (Filtered)

Elements of cost may be booked to “Quantity”, “Centres” or “ITEM”.

If they are booked to “QUANTITY” as the Quantity i.e. length of the fence is increased the RED MULTIPLIER also increases to give a proportional increase in cost.

If they are booked to “CENTRES” as the Quantity or Centres changes the RED MULTIPLIER shows Quantity / Centres. This is useful for Post elements where the first multiplier becomes the decimal number of posts. It should be noted that the decimal number of posts is not the actual number of posts. For example if the length of fence is 12m and the centres are 2m the decimal number of posts is 6 but the actual number is 7. The program is designed mainly for long runs and if needed the “RED MULTIPLIER” can be changed manually.

If they are booked to “ITEM” then the cost remains the same as the length increases which is useful for fixed costs that just need to be divided down to LM e.g. Accommodation Costs where a fixed cost of say £500 has to be spread over say 1000M of fence in which case the cost per metre is automatically calculated at 50p.

Multipliers are used to convert the element unit into the item unit and where it is necessary to calculate multipliers an On Screen Calculator has been included.



It is possible to add lump sums (Additions) to items and to update the % Margin.

### **Producing a Quotation**

Once all the items have been entered and the price is satisfactory the bill of quantity may be produced with or without sub-totals, in the middle or at the end of a quotation. Where a Quotation has two options say A and B it is possible to produce a Quotation for each section independently.

All quotations have pricing assumptions and also company terms and conditions that can be added from standards in a library.

Estimates and Quotations

Client Ref : 091007A Our Ref : 091007A.5  
 Site : A52 Borrowwash Bypass, Spondon Their Reference : wedr4567

Area : EAST Eastern Region Date Due : 22/12/2009  
 Sector : NEW New Build Date Returned : 01/01/2010  
 Status : PRICE Being Estimated / Quoted

Clients Sections Pricing Quote Letter Quote Assumptions Contract Terms & Conditions Comments

Code : STANDARD Standard Quote Letter Send Method : LETTER  
 First : Thank you for the above Enquiry. BOQ : MIDDLE

Remaining : We hope the attached information is sufficient but should you require any further information please contact me on one of the numbers below. Use Terms : YES  
 Use Subtotals : NO  
 Use Totals : NO

Record: 1 of 1

Initials : JRS John Smith Director

Quotation Bill of Quantity Tender Bill Summary Use as Main

Record: 1 of 3

Estimates and Quotations

Client Ref : 091007A Our Ref : 091007A.5  
 Site : A52 Borrowwash Bypass, Spondon Their Reference : wedr4567

Area : EAST Eastern Region Date Due : 22/12/2009  
 Sector : NEW New Build Date Returned : 01/01/2010  
 Status : PRICE Being Estimated / Quoted

Clients Sections Pricing Quote Letter Quote Assumptions Contract Terms & Conditions Comments

Assumption	Description
1	Fixed Price for Two Months.
2	Based on Current Material Costs.
3	Open For Acceptance Within Two Months.
4	Subject To Re-Measurement On Completion.
5	One Visit Allowed For. Additional Visits Charged At £
6	No Retentions Allowed For.
7	Particular Attention Is Drawn To Terms & Conditions Items.
8	If You Have Any Questions Or Queries Please Contact Us.

Add Assumptions

Record: 1 of 8

Initials : JRS John Smith Director

Quotation Bill of Quantity Tender Bill Summary Use as Main

Record: 1 of 3

Estimates and Quotations

Client Ref : 091007A      Our Ref : 091007A.5

Site : A52 Borrowwash Bypass, Spondon      Their Reference : wedr4567

Area : EAST      Eastern Region      Date Due : 22/12/2009

Sector : NEW      New Build      Date Returned : 01/01/2010

Status : PRICE      Being Estimated / Quoted

Clients   Sections   Pricing   Quote Letter   Quote Assumptions   Contract Terms & Conditions   Comments

Term	Description
01	Unless previously withdrawn this quotation is open for written acceptance for a period of 1month from the date hereof, and is subject to acceptance as a whole.
02	The rates and prices in this quotation are strictly nett and are not subject to any discount.

Add Terms

Record: 1 of 25

Initials : JRS      John Smith      Director

Quotation   Bill of Quantity   Tender Bill   Summary       Use as Main

Record: 1 of 3

## Estimates and Quotations Reports

The System produces an Invitation Register and a Quotation Register. If an invitation has come from several clients it will be shown as multiple lines in the Invitation Register while only the Main Quotation will be shown in the Quotation Register.

## Entering a Valuation

The Valuation System is started and the following is displayed.



The first stage is to visit the Estimate and Quotation form and to mark the appropriate entry with a Status of "WON".

The Enquiry is automatically transferred to the Contracts and Applications form shown overleaf.

Once awarded the basic bill structure is transferred over to the Valuation System together with the underlying make-up of prime cost and margin.

The bill structure may be modified to contain additional bill sections and / or additional bill items and these items may be processed in a similar way to estimating with the ability to change price lists, uplifts and margin.

All items in the bill are allocated a type such as Measured Works, Additional Works etc and when valued and an Application created these are the headings that appear in the document with the appropriate measures.

To facilitate the measurement of work on site a contract may be sub-divided into a number of individual runs which may contain one or many of the items in the bill of quantity.

To measure work it is first necessary to open a measure point and then to enter for the measure-point a quantity for that period.

It is important to understand that all measures entered are individual over the elapsed period since the last measure and are not cumulative.

Materials on Site and Record Sheets may be created and the totals for each Application transferred into the Front Sheet.

**Contracts and Applications**

Client Ref : 091007A Our Ref : 091007A.4

Site : WEDERS SITE Their Reference : NONE

Area : EAST Eastern Region Date Ordered :  
Sector : NEW New Build Date Started :  
Status : WON Won

Clients Sections Pricing Valuation Runs Comments

Client : AA NE  
Name : Allenbuild Ltd Contact : Chris Royston  
Address : Phoenix House Senior Estimator  
Hawthorne Park Dear Sirs  
Coal Road  
Leeds  
LS14 1PQ Tel : 0113 2375 600  
E-Mail : fred.bloggs@somewhere.com Fax : 0113 2375 601  
Mobile : 07789003454

Initials : JRS John Smith Director

Record: 1 of 2

**Contracts and Applications**

Client Ref : 091007A      Our Ref : 091007A.3

Site : WEDERS SITE      Their Reference : NONE

Area : EAST      Eastern Region

Sector : NEW      New Build

Status : WDN      Won

Date Ordered : 10/02/2010

Date Started : 25/06/2010

Clients   Sections   Pricing   Valuation   Runs   Comments

No.	On Date Application	Prev Payments
1	10/01/2010 Application No 1	£0.00
2	10/02/2010 Application No 2	£9,646.01
*		

Record Sheets   **Materials On Site**   Application   Preview Elements

Record: 1 of 2

Initials : JRS   John Smith   Director

Record: 2 of 2

The Valuation Tab allows the entry of measure points which are then used to record costs applicable to that Application. Such costs as measures entered per period (not cumulative), Record Sheets and Materials on Site as below are used to update the Application.

**Contracts and Applications**

Client Ref : 091007A      Our Ref : 091007A.3

Site : WEDERS SITE

Area : EAST      Eastern Region

Sector : NEW      New Build

Status : WDN      Won

Date Ordered : 10/02/2010

Date Started : 25/06/2010

Clients   Sections   Pricing   Valuation   Runs   Comments

**Record Sheets**

Sheet No : SHEET1      Description : This is sheet 1      Date to : 10/01/2010

Category : SF

Cost Name	Code	Description	Q
LABOUR	BAD	Beverley A Dobson	
MISC	BIT1	Misc 2 Bit	
PLANT	DIGGER	Digger	
STEEL1	A01	Steel Piece 1	
*			

Record: 1 of 4

Initials : JRS   John Smith   Director

Record: 2 of 2 (Filtered)

**Record Sheet Print**

Enquiry No. : 091007A.3 WEDERS SITE

Application : 1      Application No 1      Measure Date : 10/01/2010

Sheet No : SHEET1      Description : This is sheet 1      To Date : 10/01/2010

**LABOUR**

Code	Description	Quantity	Unit	Unit Cost	Total Cost	(+/-) %	Total Value
BAD	Beverley A Dobson	8.00	HOUR	£19.50	£156.00	10.00	£171.60
				Subtotals :	£156.00		£171.60

**MISC**

Code	Description	Quantity	Unit	Unit Cost	Total Cost	(+/-) %	Total Value
BIT1	Misc 2 Bit	5.00	LM	£100.00	£500.00	10.00	£580.00
				Subtotals :	£500.00		£580.00

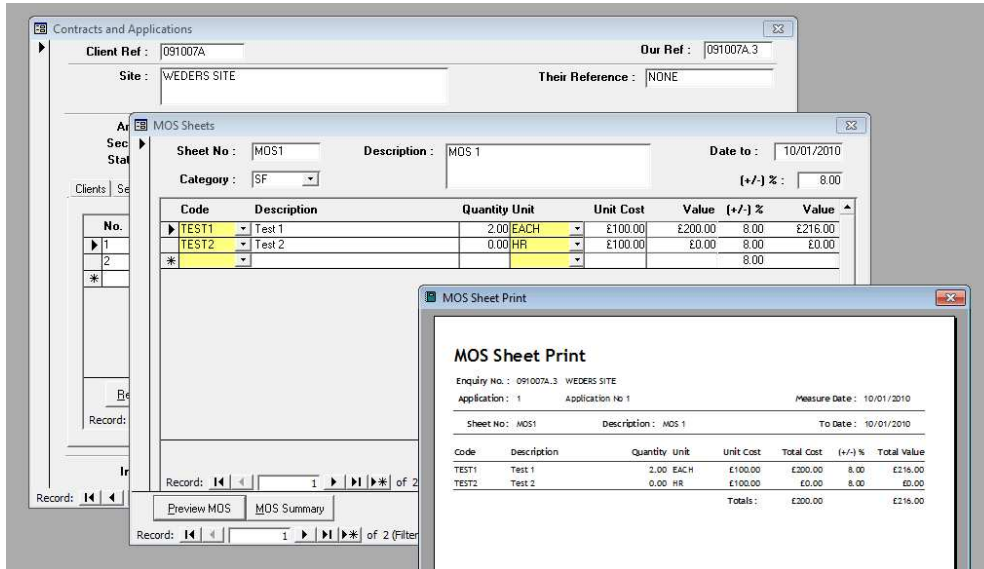
**PLANT**

Code	Description	Quantity	Unit	Unit Cost	Total Cost	(+/-) %	Total Value
DIGGER	Digger	2.00	DAY	£120.00	£240.00	10.00	£294.00
				Subtotals :	£240.00		£294.00

**STEEL1**

Code	Description	Quantity	Unit	Unit Cost	Total Cost	(+/-) %	Total Value
A01	Steel Piece 1	2.00	EACH	£10.00	£20.00	10.00	£22.00
				Subtotals :	£20.00		£22.00

**Totals :**      £916.00      £1,007.60

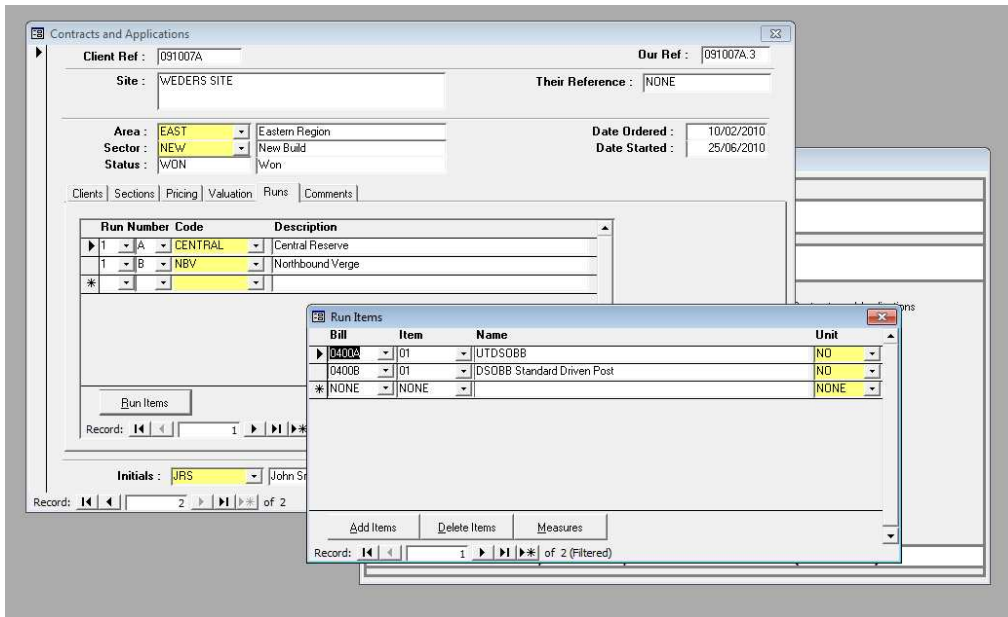


As with the Enquiry and Quotation system the “Pricing” and “Sections” tabs may be used to change the price list and discount levels employed and create new sections and items.

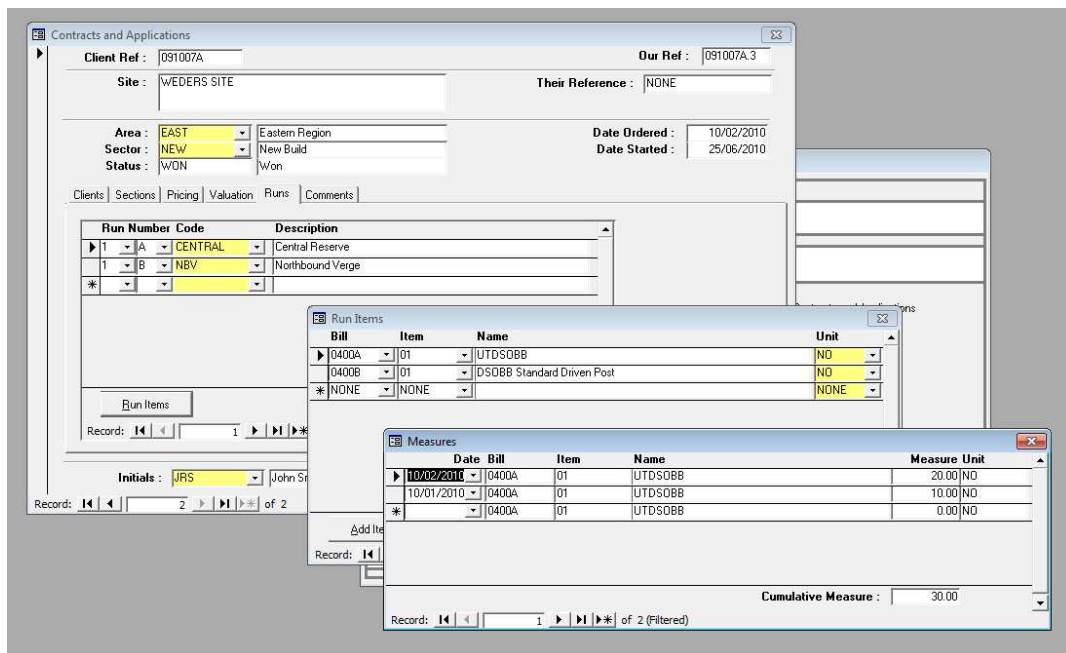
## Runs and Run Items

A Contract must contain at least one run and a full set of bill items in that run. A Contract may contain many numbered runs and each run may contain one or more items. Where a run contains all (or most of) the bill items a button has been provided to append all items to a run or to remove all items from a run.

**It must be noted that deleting a run deletes all the measures that exist for that run and in doing so damages any Applications that have been previously generated.**



Once a run has been created the measures button may be used to append a measure at one of the measure points that were entered in the Contracts and Applications form.



**Contracts and Applications**

Client Ref : 091007A      Our Ref : 091007A.3  
 Site : WEEDERS SITE      Their Reference : NONE

Area : EAST Eastern Region      Date Ordered : 10/02/2010  
 Sector : NEW New Build      Date Started : 25/06/2010  
 Status : WON Won

No.	On Date Application	Prev Payments
1	10/01/2010 Application No 1	£0.00
2	10/02/2010 Application No 2	£9,646.01

Initials : JRS John Smith Director

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**Application**

Number : 1      Application : Application No 1  
 On Date : 10/01/2010      Terms : 30      Due Date : 07/02/2010

Works to Date	Value
1 Measured Works	£6,574.10
<b>Subtotal :</b>	£6,574.10
<b>Recorded Works :</b>	£1,738.62
<b>Subtotal :</b>	£8,312.72
<b>Materials on Site :</b>	£2,716.00
<b>Subtotal :</b>	£11,028.72
<b>Discount : 10.00 % on</b>	£8,312.72      £831.27
<b>Retentions :</b>	£10,197.45
<b>General : 5.00 % on</b>	£8,312.72      £415.64
<b>Materials : 5.00 % on</b>	£2,716.00      £135.80
<b>Subtotal :</b>	£9,646.01
<b>Previous Payments :</b>	£0.00
<b>Total Application :</b>	£9,646.01

## Applications

An Application is available for each measure point and providing the measures for that point have been entered and the MOS has been properly maintained all figures for an Application automatically insert into the form from which they may be printed out.

Once one Application has been generated the previous payments may be entered as a cumulative figure in the Contracts and Applications form and they will be deducted from the second and subsequent Application.

## The Library

To reduce typing and to speed up operation of the system a Library exists which contains lists of Clients, Suppliers, Standard Items, and Price Lists etc.

A small section of the Library is printed overlief.