

Scientia®

ENTERPRISE

Enterprise Desktop Reference Data Manager

User Guide

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Table of Contents

1	Introduction.....	5
2	Opening the Application.....	6
2.1	Drop-down Menus.....	6
2.1.1	File Drop-down Menu.....	7
2.1.2	Institution Drop-down Menu.....	7
2.1.3	Resources Drop-down Menu.....	7
2.1.4	Time Constraints Drop-down Menu.....	8
2.1.5	Groups Drop-down Menu.....	8
2.1.6	Help Drop-down Menu.....	9
2.2	The Toolbar.....	9
3	Using the Application.....	10
3.1	Departments.....	10
3.1.1	Navigating the Window.....	11
3.1.2	Selecting Data Rows and Data Cells.....	11
3.1.3	Adding a New Department.....	11
3.1.4	Specifying the Department of a Department.....	12
3.1.5	Deleting a Department.....	13
3.2	Suitabilities.....	14
3.2.1	Navigating the Window.....	14
3.3	Tags.....	16
3.4	Zones.....	17
4	Resources.....	20
4.1	Equipment.....	20
4.2	Locations.....	20
4.3	Pooled Resources.....	21
4.4	Staff.....	21
5	Time Constraints.....	24
5.1	Availability Patterns.....	24
5.2	Start Preference Patterns.....	25
5.3	Usage Preference Patterns.....	26
5.4	Time Blocks.....	28
5.5	Free Blocks.....	29
5.6	Maximum Hours.....	31
5.7	Maximum Workspans.....	31
5.8	Resource Breaks.....	32
5.9	Applying Time-Based Constraints.....	33
5.10	Inheritance.....	35
5.11	Travel Tables.....	36
5.12	Applying Travel Tables Constraints.....	38
6	Glossary of Terms.....	42

Table of Figures

Figure 1 ClickOnce icon to run EDRDM	6
Figure 2 EDRDM main window.....	6
Figure 3 File menu	7
Figure 4 Institution menu	7
Figure 5 Resources menu.....	7
Figure 6 Time Constraints menu	8
Figure 7 Groups menu	8
Figure 8 Help menu.....	9
Figure 9 Toolbar	9
Figure 10 Departments editor	10
Figure 11 Navigation buttons	11
Figure 12 Selected row	11
Figure 13 Edit mode	11
Figure 14 Adding a department	12
Figure 15 Action buttons	12
Figure 16 Editing department field.....	12
Figure 17 Selecting the department.....	13
Figure 18 Department selected	13
Figure 19 Deleting a department	14
Figure 20 Suitabilities editor	15
Figure 21 Edit primary locations	15
Figure 22 Selecting locations to associate with a suitability	16
Figure 23 Tags editor.....	17
Figure 24 Zones editor	17
Figure 25 Location associated with a zone.....	18
Figure 26 Equipment editor	20
Figure 27 Locations editor	21
Figure 28 Pooled Resources editor	21
Figure 29 Staff editor	22
Figure 30 Availability Patterns editor.....	24
Figure 31 Describing the availability pattern	25
Figure 32 Start Preference Patterns editor.....	26
Figure 33 Describing the start preferences pattern	26
Figure 34 Usage Preference Patterns editor	27
Figure 35 Describing the usage preference pattern	27
Figure 36 Availability pattern.....	27
Figure 37 Time Blocks editor.....	28
Figure 38 All day time block	28
Figure 39 Evening time block.....	29
Figure 40 Lunch time block.....	29
Figure 41 Free Blocks editor	30
Figure 42 Selecting time blocks.....	30
Figure 43 Maximum Hours editor	31
Figure 44 Selecting time blocks.....	31
Figure 45 Maximum Workspans editor.....	32
Figure 46 Selecting time blocks.....	32
Figure 47 Resource breaks editor	32
Figure 48 Selecting time blocks.....	33
Figure 49 Constraint Profiles editor	33

Figure 50 Time Constraints list.....	34
Figure 51 Adding a constraint to a profile.....	34
Figure 52 Time Constraints list with active constraints	35
Figure 53 Edit inherited profiles.....	35
Figure 54 Travel Tables editor	36
Figure 55 Journeys control	36
Figure 56 Journeys control with new journey added	37
Figure 57 Locations and Zones selection lists.....	37
Figure 58 Journeys control with journeys defined.....	37
Figure 59 Constraint Profiles editor	38
Figure 60 Constraint Profile with inherited profile	38
Figure 61 Adding a constraint profile to a member of staff	39
Figure 62 Selecting the constraint profile(s) to apply	39
Figure 63 Staff editor with profile added	40

1 Introduction

This User Guide is designed to be used in conjunction with the **Enterprise Desktop Reference Data Manager** (EDRDM) application. Some tools that you will use in this piece of software are common across all Enterprise applications. Before using this guide you should read the **Enterprise Interface User Guide** in order to familiarise yourself with those common elements.

This application is designed to allow the creation and maintenance of data related to resources (Staff, Locations and Equipment), and their related properties; (e.g. Departments, Zones, Suitabilities, Tags, Groups, Constraint Profiles and Availability Patterns).

The EDRDM application is:

- Web-deployed, making it accessible to users with the required knowledge of the data.
- Designed as a simple-to-use interface.
- Controlled by **Authorisation Manager** so that permissions can be restricted.

Before construction of a timetable can begin, the timetabler must know about the available resources and any constraints or preferences that will influence the way those resources are used. Some examples, by no means an exhaustive list, are described below:

Staff

- May only be available for teaching delivered by their own Department, or may deliver service teaching for other Departments.
- Individuals may have personal preferences about when they deliver their teaching.
- Accepted working practice might dictate that staff have agreed break times and must satisfy specified loading criteria.

Locations

- Reducing travel time for staff and students might be a key scheduling goal.
- A building may be closed at a specific time of day, making all locations within that building unavailable.
- A given activity may require a location with very specific properties; (e.g. it must be wheelchair accessible with a data projector and a water supply).

Equipment

- May be fixed in a room or portable.
- Some items of equipment may be owned by departments while others are centrally owned resources.
- Time must be allowed for equipment to be transported from one class to another.

All of the above examples can be taken into consideration when creating and managing data using the EDRDM application.

2 Opening the Application

The EDRDM application is accessed from the Scientia Enterprise portal via the Web browser.



Figure 1 ClickOnce icon to run EDRDM

On opening the application, the following screen will appear:

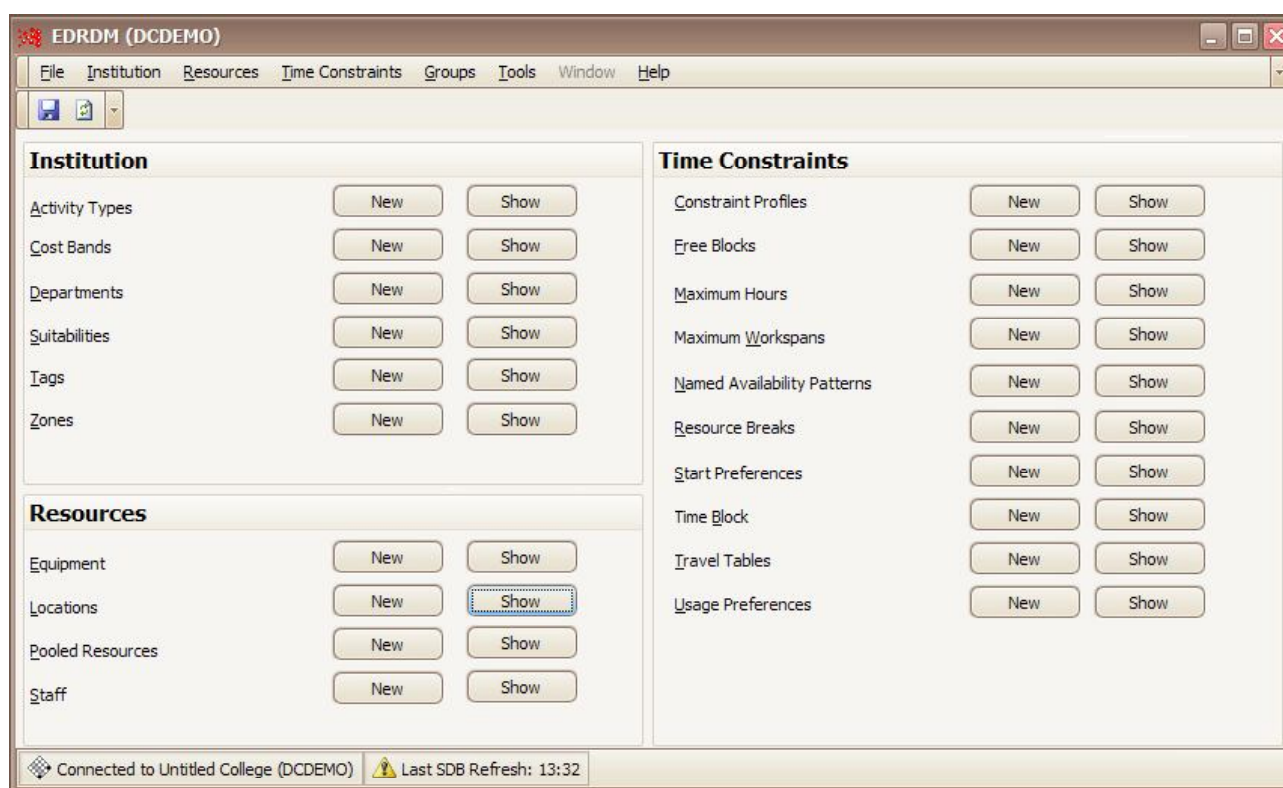


Figure 2 EDRDM main window

The screen simply consists of a Menu bar containing a variety of drop-down menus, and a Toolbar containing icons.

At the foot of the screen, a message appears indicating that the application is connected to the required dataset.

2.1 Drop-down Menus

A variety of drop-down menus is available from the Header bar giving access to various functions and windows within the application. These menus are illustrated below, and the various functions and windows accessed via the drop-down menus are explained in later sections of this manual.

2.1.1 File Drop-down Menu



Figure 3 File menu

The **File** drop-down menu allows the user to *Refresh* from the database, *Writeback* to the database and to *Exit* the application. The *Refresh* and *Writeback* functions are also available as icons on the **Toolbar** which will be described in a later section.

2.1.2 Institution Drop-down Menu



Figure 4 Institution menu

The **Institution** drop-down menu allows the user to access additional windows that deal with those portions of the data which can be applied to objects across the entire institution; namely, *Departments*, *Suitabilities*, *Tags* and *Zones*.

2.1.3 Resources Drop-down Menu

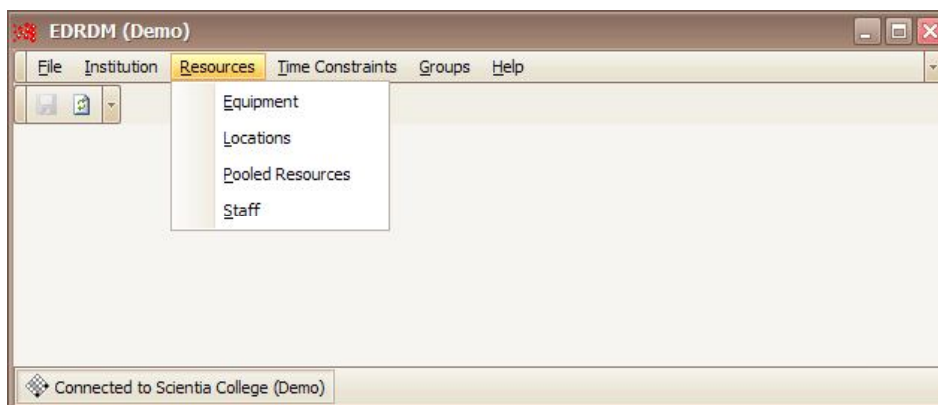


Figure 5 Resources menu

The **Resources** drop-down menu allows the user access to the various teaching resource data windows; *Equipment*, *Locations*, *Pooled Resources* and *Staff*. Resources can then be created or amended as required.

2.1.4 Time Constraints Drop-down Menu

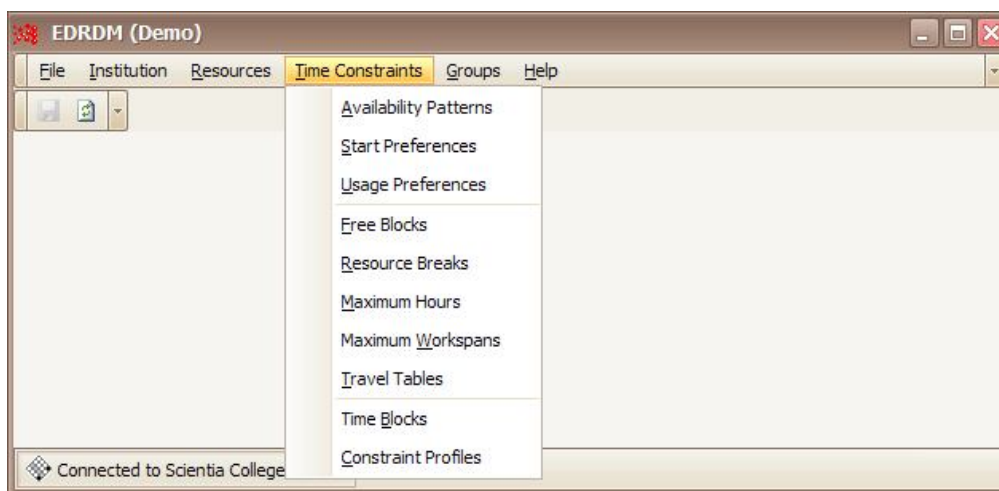


Figure 6 Time Constraints menu

The **Time Constraints** drop-down menu gives the user the capability to create time-based constraint data which can then be applied to resources, programmes, modules and activities using the Enterprise Course Planner and Enterprise Timetabler applications.

The **Time Constraints** include *Availability Patterns*, *Start Preferences*, *Usage Preferences*, *Free Blocks*, *Resource Breaks*, *Maximum Hours*, *Maximum Workspans*, *Travel Tables*, *Time Blocks* and *Constraint Profiles*.

2.1.5 Groups Drop-down Menu

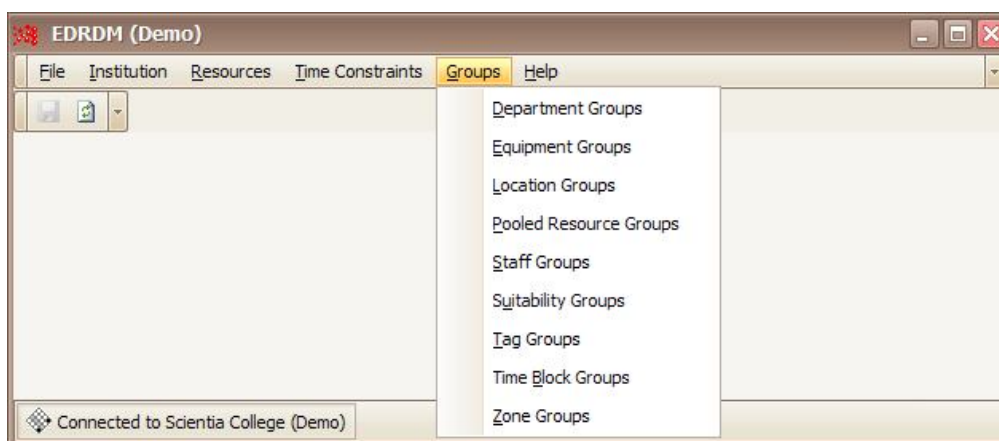


Figure 7 Groups menu

The **Groups** drop-down menu allows the user to create and maintain groups of objects that may be used for filtering in other applications. The *Groups* include *Department*, *Equipment*, *Location*, *Pooled Resource*, *Staff*, *Suitability*, *Tag*, *Time Block* and *Zone*.

2.1.6 Help Drop-down Menu



Figure 8 Help menu

The **Help** drop-down menu simply allows the user to display details about the EDRDM application. Clicking on *About EDRDM* gives details of the version of EDRDM being used as well as licence details.

2.2 The Toolbar

The **Toolbar** is located below the **Menu Bar** and contains two icons.

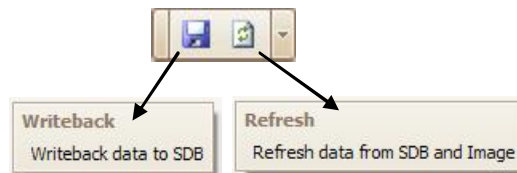


Figure 9 Toolbar

Hovering over each icon with the cursor will open *tooltips* explaining their use. More information about *tooltips* is available in the **Enterprise Interface User Guide**.

The arrow symbol at the right hand end of the **Toolbar** allows the user to customise the toolbar to their own requirements and to speed up the way they work. Details of how to undertake toolbar customisation are available in the **Enterprise Interface User Guide**.

3 Using the Application

The primary use of the **Enterprise Desktop Reference Data Manager** is to create, delete and amend the object data that is used in the other scheduling applications available from the **Enterprise Scientia Portal**. These applications include **Enterprise Course Planner (ECP)**, **Enterprise Timetabler (ET)** and **Web Room Booking (WRB)**.

3.1 Departments

Selecting **Departments** from the **Institution** drop-down menu opens the **Departments** window.

This window allows the user to amend existing departments, and create new departments.

In addition, and provided the user has the correct permissions in the **Enterprise Authorisation Manager** application, departments can also be deleted using this window.

The ability for users to see and modify objects in other applications such as Enterprise Timetabler or Enterprise Course Planner may be dependent on those objects being attached to a department. If permissions have been set up in Authorisation Manager in such a way then it is important to ensure that any newly created objects are associated with the appropriate department.

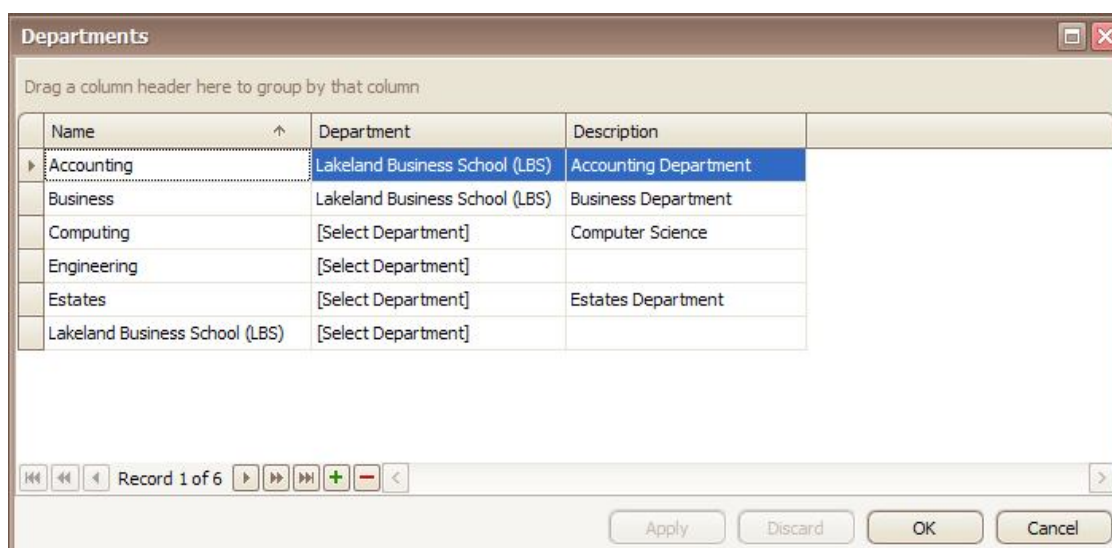


Figure 10 Departments editor

3.1.1 Navigating the Window

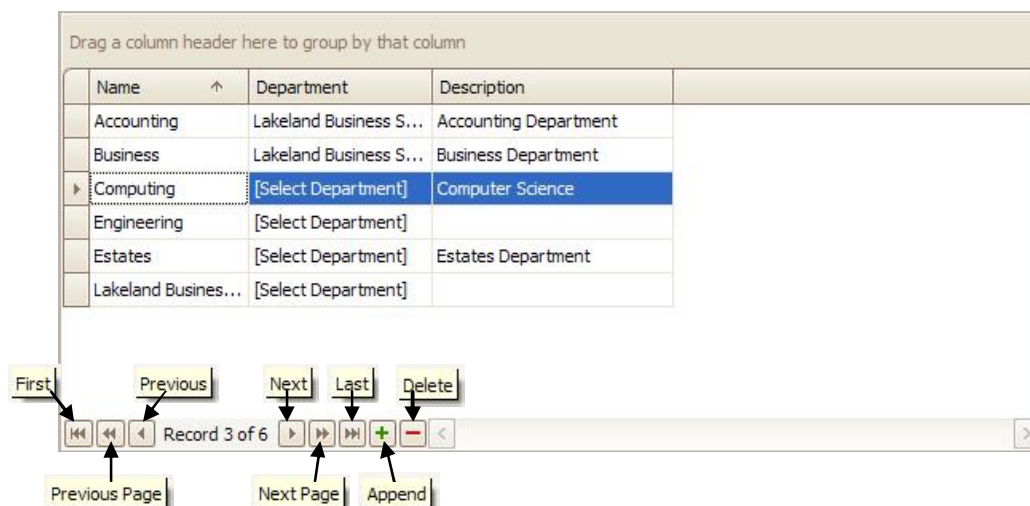


Figure 11 Navigation buttons

The toolbar at the bottom of the window allows the user to navigate around the object data. In addition, using the *Append* and *Delete* buttons, data rows can be added and removed as required.

3.1.2 Selecting Data Rows and Data Cells

Data objects can be selected as a whole by highlighting the relevant row. To edit the data within a cell, select the individual cell. Depending on the selection, the appearance of the window will change:

A selected row will appear as follows:

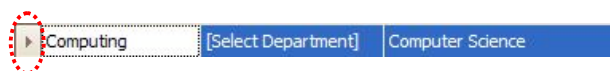


Figure 12 Selected row

When in edit mode the cell will appear as follows:

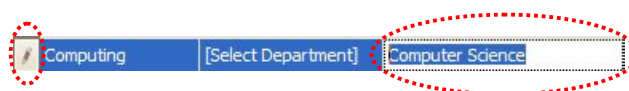


Figure 13 Edit mode

Note that the symbol in the left-hand column changes depending on whether the object is selected or a cell is in edit mode.

3.1.3 Adding a New Department

Clicking on the *Append* button will add a new row at the bottom of the list. The required cell can then be selected, and the relevant information entered. Note that the *Action Buttons* at the bottom of the window become active.

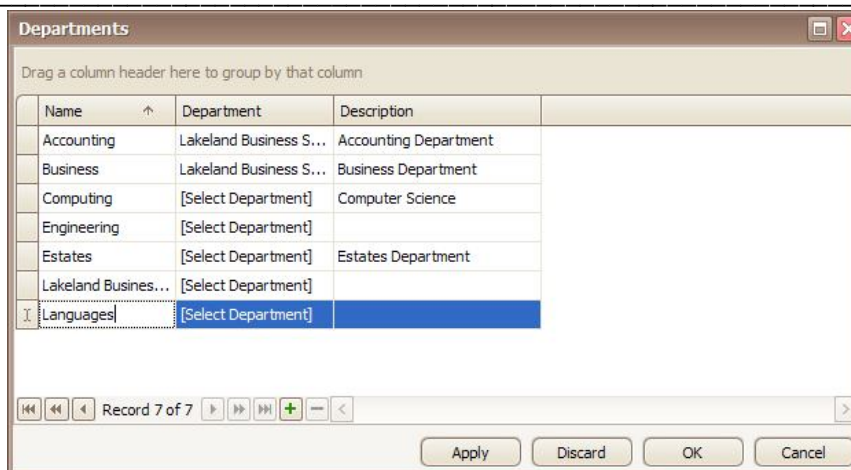


Figure 14 Adding a department

Changes made to the data are confirmed or cancelled using the buttons at the bottom of the object window:

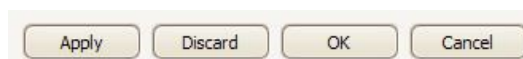


Figure 15 Action buttons

- *Apply* confirms the change but keeps the window open
- *Discard* cancels the change and keeps the window open
- *OK* confirms the change and closes the window
- *Cancel* cancels the change and closes the window

3.1.4 Specifying the Department of a Department

In the example shown, the *Languages* department has been created. If however the user then goes on to create the *Spanish* department, which *belongs* to the *School of Languages*, for information purposes it may be necessary to attach the *Spanish* department to the *Languages* department.

The **Department** cell contains an instruction; [Select Department]. Selecting this cell changes the view allowing access to a drop-down list:

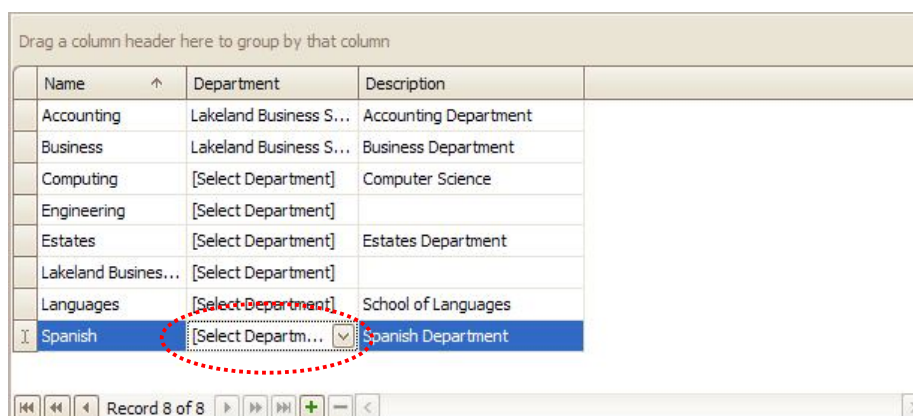


Figure 16 Editing department field

Opening the drop-down list enables the user to attach the required department to the data object.

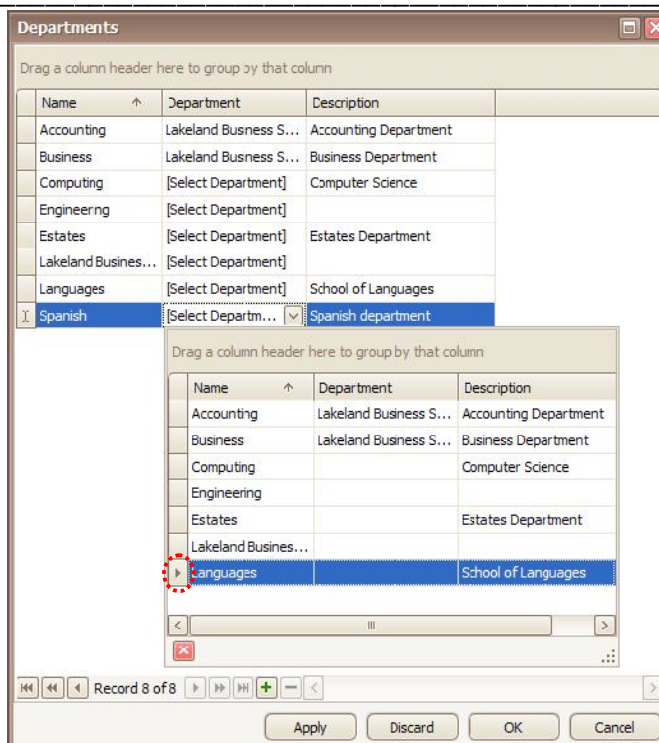


Figure 17 Selecting the department

Attaching the required Department to a data object is achieved by selecting the correct data row.

Selection of the row will close the drop-down list and apply the required selection.

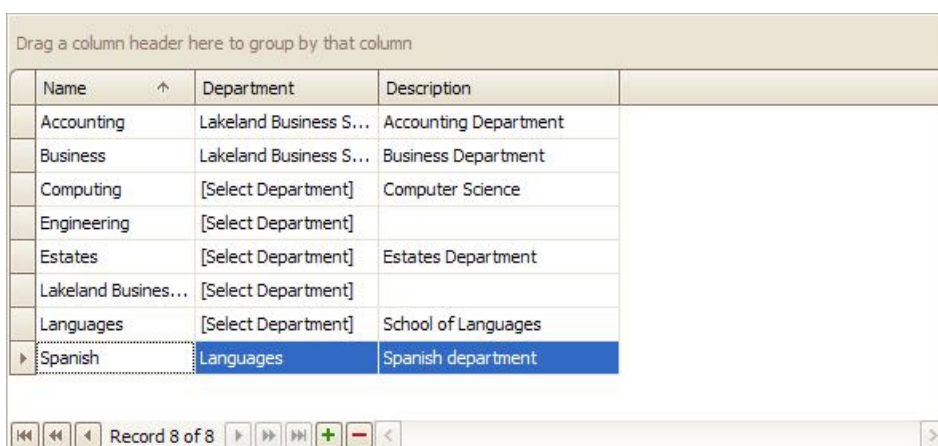


Figure 18 Department selected

Any changes made must be applied or discarded using the *Action Buttons*.

Further information regarding the use of drop-down lists is available in the **Enterprise Interface User Guide**.

3.1.5 Deleting a Department

Provided the user has the correct permissions set up in the **Enterprise Authorisation Manager**, the user is also able to *Delete* departments.

This process is carried out by selecting a data row and then clicking on the *Delete* button on the toolbar.

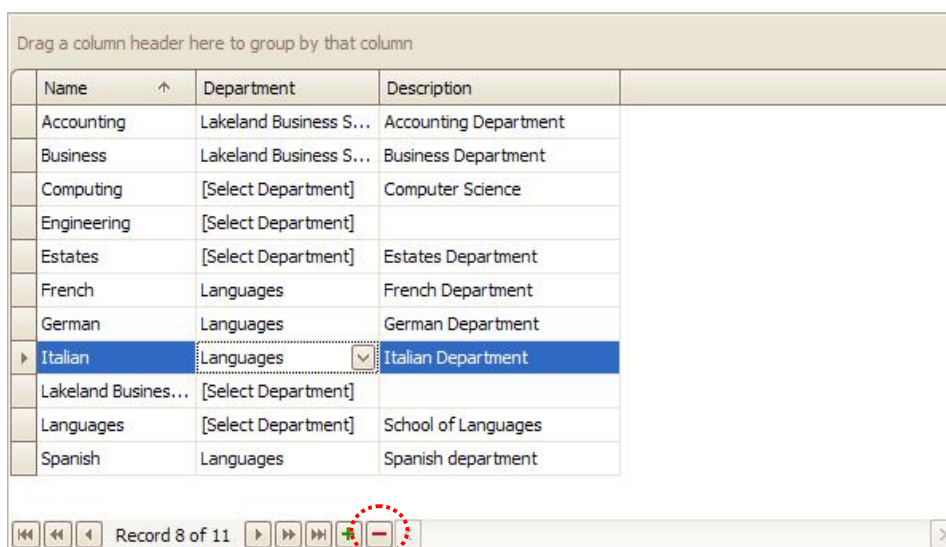


Figure 19 Deleting a department

In this case, using the *Apply* or *OK* button confirms the deletion, but using the *Discard* or *Cancel* button will reinstate the deleted line.

IT SHOULD BE NOTED THAT DELETING A DEPARTMENT IN EDRDM WILL DELETE ALL DATA OBJECTS OWNED BY THAT DEPARTMENT. PERMISSION TO DELETE DEPARTMENTS SHOULD BE RESTRICTED, USING AUTHORISATION MANAGER, TO FEW USERS.

3.2 Suitabilities

Suitabilities are a way of describing the characteristics of a resource and can be applied to locations, staff and equipment.

Suitabilities are used when activities are created and scheduled, allowing us to guide the software in choosing the type of resource that should be used to meet the requirements of the activity.

When setting up activities, we can use suitabilities in two ways:

- To help us obtain a 'shortlist' of suitable resources, thereby simplifying the decision on which resources we want to use.
- To 'wildcard' resourcing, letting Syllabus Plus choose which resource to use, within the suitabilities selected

In simple terms a suitability is an attribute shared by a number of resources.

3.2.1 Navigating the Window

The **Suitabilities** window works in exactly the same way as the **Departments** window using the toolbar to navigate between records and to *Append* and to *Delete* records.

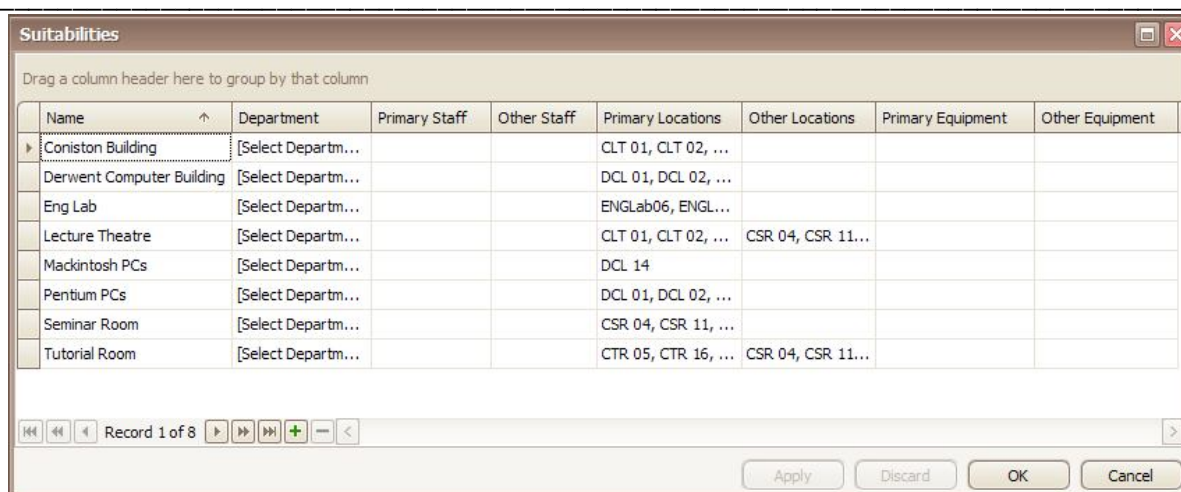


Figure 20 Suitabilities editor

Adding a Suitability using the *Append* button, using the drop-down list to select a *Department* and deleting a Suitability using the *Delete* button all work in exactly the same way as described above. (However, deleting Suitabilities does not result in any hierarchical deletion of other data).

There is a difference, however, in the cells found in the columns (*Primary & Other*) for *Staff*, *Locations & Equipment*.

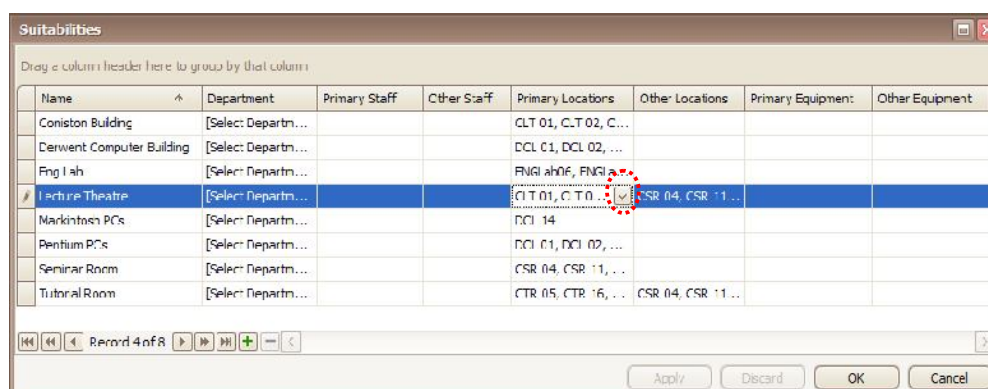


Figure 21 Edit primary locations

In this instance, selecting one of the Resource cells against a Suitability allows the user to open a **Multiple Selection Control**, enabling the user to select a number of items from a longer list. In the example shown above, selecting the *Primary Locations* cell against the *Lecture Theatre* suitability allows the user to open the **Multiple Selection Control** illustrated below:

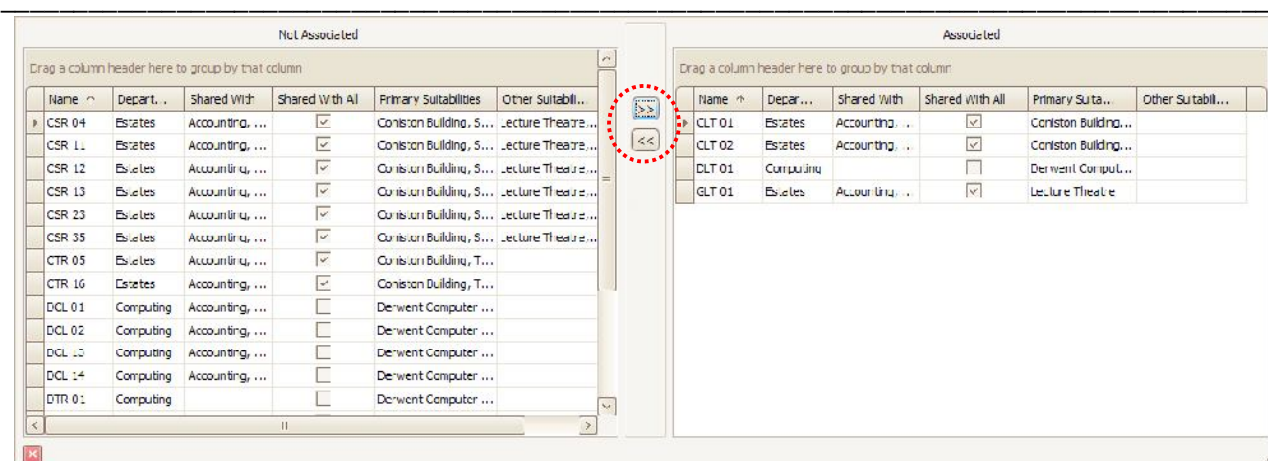







Figure 22 Selecting locations to associate with a suitability

Note the headings where data objects are either *Not Associated* or *Associated*. Location resources can be moved from the *Not Associated* to the *Associated* boxes and *vice versa* by selecting the location(s) you wish to move and using the  and  buttons located between the boxes.

The **Multiple Selection Control** is closed (and any data retained) when the user clicks anywhere outside the control to continue editing, or by clicking on the  symbol. The control can be resized if desired by clicking and dragging on the corner marked with a dotted triangle (bottom right in the figure above).

Note that, although it shares some aspects of appearance and behaviour with a typical window, the **Multiple Selection Control** is **not** a window. It is a special control for editing the content of a cell when that content is too complex to be edited in line. Important differences to note are: the  symbol may appear in any corner of the control, the size and position of the control is dictated by the space available on screen, clicking  does not cancel the edit made to the cell. It is equivalent to clicking on another cell in the grid. Once the control has disappeared the action can be discarded using the Discard or the Cancel button.

3.3 Tags

The **Tags** window can be used to attach additional information to any of the objects within the Enterprise applications using the **Tags** column. As an example, we can create Tags entitled “Confirmed” and “Provisional”. These tags can then be applied to Modules, Programmes of Study, Activities etc. Other Tags could be “Full Time”, “Part Time” or “Awaiting Evaluation”, or in the case of *ad hoc* bookings, you could create a Tag for each departmental “admin” office that made the booking.

Objects can be attached to multiple Tags and can be filtered by Tags.

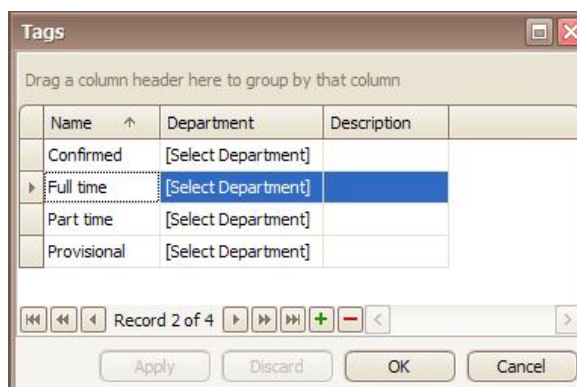


Figure 23 Tags editor

Tags are created and deleted in exactly the same way as in the previously described windows.

Using **Tags** in EDRDM involves selecting and applying the correct column from the **Column Chooser** and then selecting the required **Tag(s)** from a **Multiple Selection Control**.

3.4 Zones

The **Zones** window is used to define geographical areas of the institution, and you will note in the example shown, two different campuses are named, *Central Campus* and *Lakeside Campus*, as well as other zones. **Zones** may be physically separate sites, different buildings on the same site, or even different floors of the same building.

Zones may be hierarchical in structure. When you select *Lakeland Business School*, for example, you will see that the building is located on the *Central campus*.

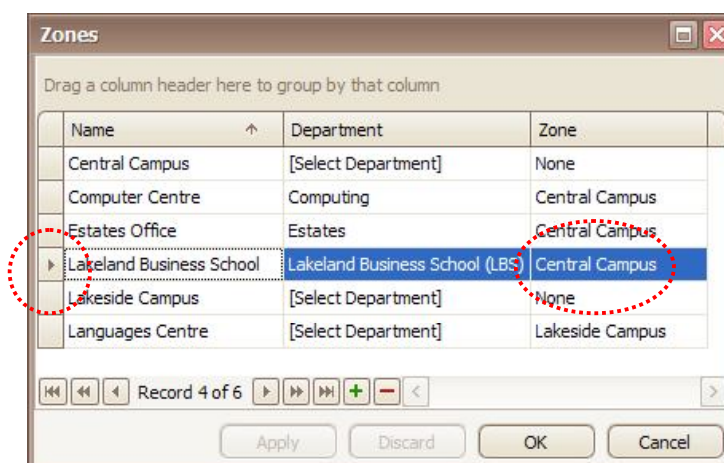


Figure 24 Zones editor

Resources can be associated with **Zones** to, indicating the geographical area in which those resources are located or their preferred teaching zone – for example, locations may be in a particular geographical zone, whereas staff may indicate a preferred zone for their teaching activities. When calculating travel times, mobile resources (staff members and equipment items) are deemed to begin the day in their preferred zone.

The example illustrated below shows a room located in the **Zone** called *Lakeland Business School*.

Locations

Drag a column header here to group by that column

Name ↑	Depar...	Shared With	Shared With All	Primary Suitabili...	Other Suitabili...	Zone
CLT 01	Estates	Accounting, ...	<input checked="" type="checkbox"/>	Coniston Building, ...		Lakeland Business School
CLT 02	Estates	Accounting, ...	<input checked="" type="checkbox"/>	Coniston Building, ...		Lakeland Business School
CSR 04	Estates	Accounting, ...	<input checked="" type="checkbox"/>	Coniston Building, ...	Lecture Theatre,...	Lakeland Business School
CSR 11	Estates	Accounting, ...	<input checked="" type="checkbox"/>	Coniston Building, ...	Lecture Theatre,...	Lakeland Business School
CSR 12	Estates	Accounting, ...	<input checked="" type="checkbox"/>	Coniston Building, ...	Lecture Theatre,...	Lakeland Business School
CSR 13	Estates	Accounting, ...	<input checked="" type="checkbox"/>	Coniston Building, ...	Lecture Theatre,...	Lakeland Business School
CSR 23	Estates	Accounting, ...	<input checked="" type="checkbox"/>	Coniston Building, ...	Lecture Theatre,...	Lakeland Business School
▶ CSR 35	Estates	Accounting, ...	<input checked="" type="checkbox"/>	Coniston Building, ...	Lecture Theatre,...	Lakeland Business School
CTR 05	Estates	Accounting, ...	<input checked="" type="checkbox"/>	Coniston Building, ...		Lakeland Business School
CTR 16	Estates	Accounting, ...	<input checked="" type="checkbox"/>	Coniston Building, ...		Lakeland Business School
DCL 01	Computing	Accounting, ...	<input type="checkbox"/>	Derwent Compute...		Computer Centre
DCL 02	Computing	Accounting, ...	<input type="checkbox"/>	Derwent Compute...		Computer Centre

Record 8 of 23

Apply Discard OK Cancel

Figure 25 Location associated with a zone

Intentionally left blank

4 Resources

Resources are used when teaching *activities*. In Enterprise, the teaching resources consist of *Equipment, Locations, Pooled Resources* and *Staff*. The **Resource Data Manager** is used to create and manage these **Resources** in preparation for creating and scheduling activities within the various Enterprise Applications.

The **Resource** windows are accessed from the **Resources** drop-down menu. Some or all of these resources are used when scheduling the required teaching activities.

The **Resource** windows are all essentially the same and work in the same way as that described above. Illustrated below are the various **Resource** windows that are available to the user:

4.1 Equipment

Note the capability to share **Equipment** with either *individual* or *all* Departments as well as the ability to associate *Suitabilities* with items of **Equipment**. Sharing a resource with a department allows activities of that department to use the resource. Whether the resource can be allocated directly or must be requested is controlled by permission set in Authorisation Manager.

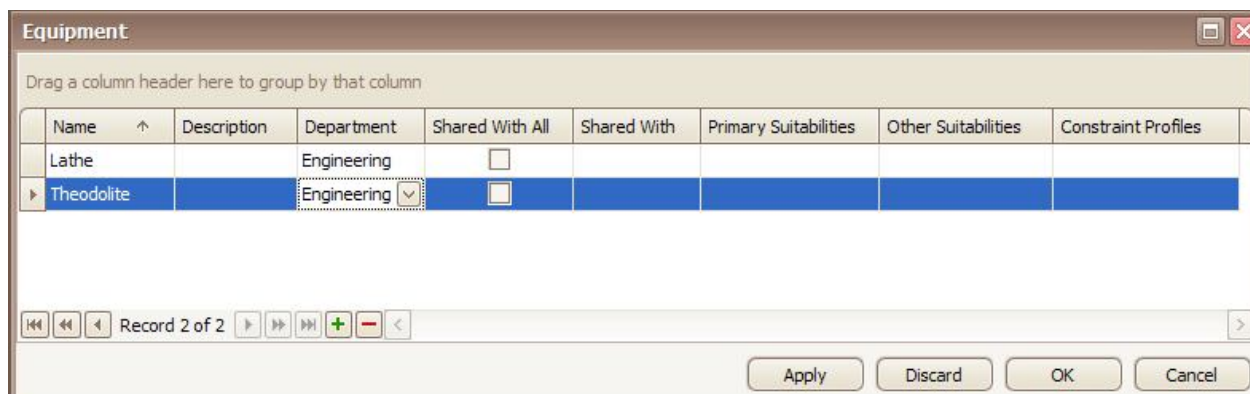


Figure 26 Equipment editor

4.2 Locations

Locations can also be shared with other Departments or, if centrally bookable, shared with all Departments. **Locations** can also be attached to various *Suitabilities* as well as shown in specific geographical **Zones**.

Locations

Drag a column header here to group by that column

Name ↑	Department	Shared With	Shared With All	Primary Suitabilities	Other Suitabilities	Zone
CLT 01	Estates	Accounting, ...	<input checked="" type="checkbox"/>	Coniston Building, L...		Lakeland Business School
CLT 02	Estates	Accounting, ...	<input checked="" type="checkbox"/>	Coniston Building, L...		Lakeland Business School
CSR 04	Estates	Accounting, ...	<input checked="" type="checkbox"/>	Coniston Building, S...	Lecture Theatre, ...	Lakeland Business School
CSR 11	Estates	Accounting, ...	<input checked="" type="checkbox"/>	Coniston Building, S...	Lecture Theatre, ...	Lakeland Business School
CSR 12	Estates	Accounting, ...	<input checked="" type="checkbox"/>	Coniston Building, S...	Lecture Theatre, ...	Lakeland Business School
CSR 13	Estates	Accounting, ...	<input checked="" type="checkbox"/>	Coniston Building, S...	Lecture Theatre, ...	Lakeland Business School
CSR 23	Estates	Accounting, ...	<input checked="" type="checkbox"/>	Coniston Building, S...	Lecture Theatre, ...	Lakeland Business School
CSR 35	Estates	Accounting, ...	<input checked="" type="checkbox"/>	Coniston Building, S...	Lecture Theatre, ...	Lakeland Business School
CTR 05	Estates	Accounting, ...	<input checked="" type="checkbox"/>	Coniston Building, T...		Lakeland Business School
CTR 16	Estates	Accounting, ...	<input checked="" type="checkbox"/>	Coniston Building, T...		Lakeland Business School
DCL 01	Computing	Accounting, ...	<input type="checkbox"/>	Derwent Computer ...		Computer Centre
DCL 02	Computing	Accounting, ...	<input type="checkbox"/>	Derwent Computer ...		Computer Centre
DCL 13	Computing	Accounting, ...	<input type="checkbox"/>	Derwent Computer ...		Computer Centre

Record 1 of 23

Apply Discard OK Cancel

Figure 27 Locations editor

4.3 Pooled Resources

The **Pooled Resources** window can be used to list items of equipment such as cameras, laptop computers, protective clothing, microscopes etc., where more than one item may be needed simultaneously by an activity. A number of items are then selected from the available “pool” and allocated to an **Activity** as required. Illustrated below as an example is a pool of 15 Laptops which, whilst belonging to the *Computing* Department, are also shared with all other Departments.

Pooled Resources

Drag a column header here to group by that column

Name ↑	Pool Size	Department	Shared With	Shared With All
Laptops	15	Computing		<input checked="" type="checkbox"/>

Record 1 of 1

Apply Discard OK Cancel

Figure 28 Pooled Resources editor

4.4 Staff

The **Staff** window is used to record details of the staff resources that are available to be scheduled into the Institution timetable. As in the resource windows illustrated above, **Staff** can belong to a specific Department, as well as being shared with other Departments, or shared with all Departments.

In addition, information can be added about the *Email* address for each member of staff as well as whether they are *Part Time* or not. Further columns can be used to indicate a staff member's *Contract Periods* as well as their *Maximum Periods*, in other words, the number of hours they are contracted to teach as well as the maximum hours they are allowed to teach (contracted hours, plus any allowable overtime).

Finally, in the illustration shown below, *Constraint Profiles* can also be added to **Staff** to include such constraints as *Resource Breaks*, *Maximum Hours* and *Travel Tables*.

Drag a column header here to group by that column

Name ↑	Email	PT?	Department	Shared With	Shared With All	Contract Periods	Maximum Periods	Constraint Profiles
Allen, A		<input type="checkbox"/>	Computing		<input type="checkbox"/>	144	144	
Archer, A		<input checked="" type="checkbox"/>	Accounting		<input type="checkbox"/>	24	24	
Armitage, A		<input type="checkbox"/>	Engineering		<input type="checkbox"/>	144	144	
Berry, J		<input type="checkbox"/>	Computing		<input type="checkbox"/>	144	144	
Blue, B		<input type="checkbox"/>	Engineering		<input type="checkbox"/>	144	144	
▶ Bowers, J		<input type="checkbox"/>	Business	Accounting	<input type="checkbox"/>	144	144	
Bramhall, J		<input type="checkbox"/>	Business		<input type="checkbox"/>	144	144	
Brownlie, S		<input type="checkbox"/>	Business		<input type="checkbox"/>	144	144	
Clark, A		<input type="checkbox"/>	Engineering		<input type="checkbox"/>	144	144	
Corbett, D		<input type="checkbox"/>	Engineering		<input type="checkbox"/>	144	144	
Cullen, P		<input type="checkbox"/>	Business		<input type="checkbox"/>	144	144	
Forster, G		<input type="checkbox"/>	Engineering		<input type="checkbox"/>	144	144	
Foster, D		<input type="checkbox"/>	Accounting		<input type="checkbox"/>	144	144	
Gorman, A		<input type="checkbox"/>	Computing		<input type="checkbox"/>	144	144	

Record 6 of 25

Apply Discard OK Cancel

Figure 29 Staff editor

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5 Time Constraints

Time Constraints allow the user to create and manage time-based constraint data which can then be applied to resources using the Enterprise Course Planner and Enterprise Timetabler applications. Within the EDRDM application, the **Time Constraints** include *Availability Patterns*, *Start Preferences*, *Usage Preferences*, *Free Blocks*, *Resource Breaks*, *Maximum Hours*, *Maximum Workspans*, *Travel Tables*, *Time Blocks* and *Constraint Profiles*.

5.1 Availability Patterns

Availability Patterns are a way of describing a pattern of weeks, days and times when an object is available. They can be applied to Modules, Resources and Activities.

The **Availability Patterns** window, illustrated below allows teaching week patterns to be created using the *Name*, *Description* and *Availability* columns. **Availability Patterns** can also be attached to a Department.

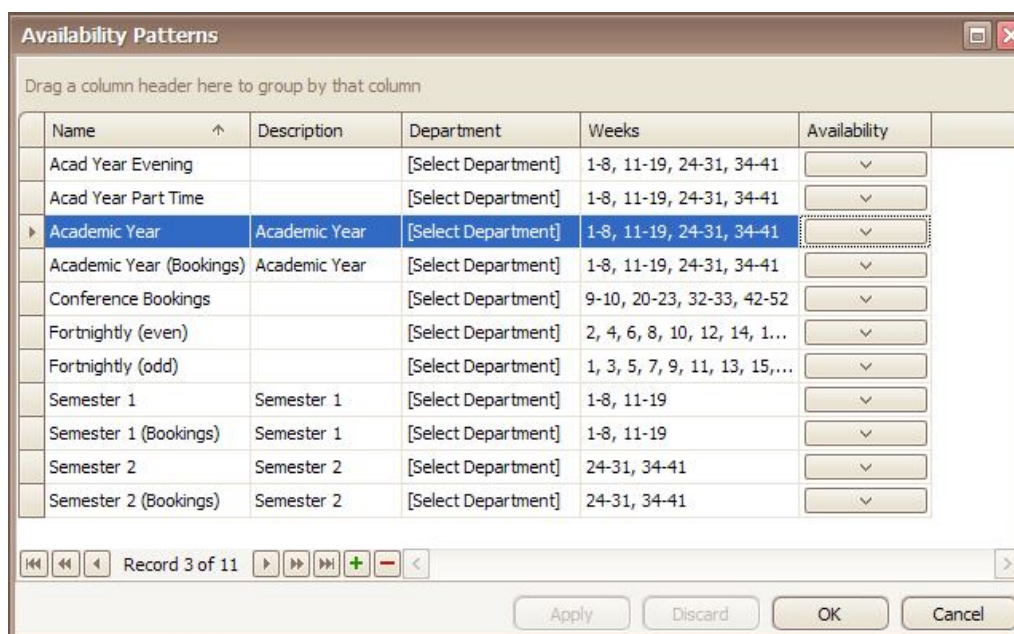


Figure 30 Availability Patterns editor

Availabilities are created using either a combination of the *Weeks* column and the *Availability* column, or by simply using the *Availability* column. Weeks that are typed in manually, in the format illustrated, will be reflected in the *Teaching Week Pattern* element in the control that appears when the in the *Availability* column is selected.

Omitting a week from the *Teaching Week Pattern* implies that no teaching can occur in that week for the object to which the pattern is applied. Weeks that are selected (available) will appear in light grey (as they do in the ET week selection tool). Weeks that are not selected (unavailable) will appear in white.

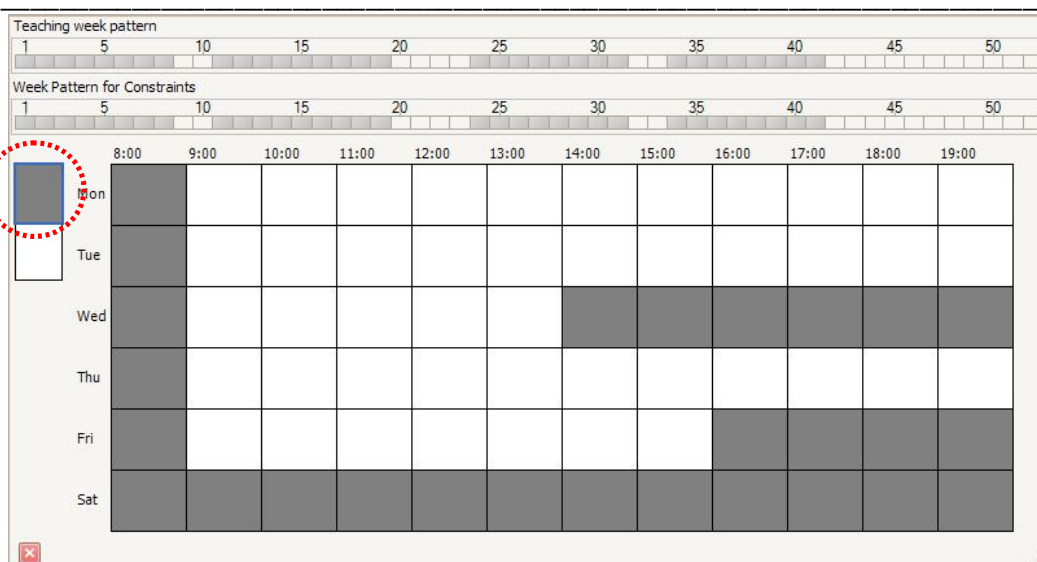


Figure 31 Describing the availability pattern

Additional constraints can be applied using the week grid. In the example shown, selecting the grey area of the palette (circled) allows the user to “paint” out time blocks during the teaching week. In this instance the grey blocks indicate that teaching activities cannot be scheduled before 9.00 or on a Saturday. Furthermore, teaching activities cannot be scheduled on a Wednesday afternoon after 14.00 or on a Friday evening after 16.00.

The *Week Pattern for Constraints* element of the control allows the pattern of availability to be applied to selected weeks only. By selecting weeks 1-8, for example, you can edit the availability pattern of those weeks independently of others.

These constraints are described as “hard” constraints – in other words, once applied to an activity or resource, that object will not be allowed to schedule into sections of the grid that are greyed out.

5.2 Start Preference Patterns

Start Preference Patterns allow the user to set patterns that can be applied to various objects (Modules, Activities, Resources etc.), indicating when the user would *prefer* the scheduling to start. In this instance, the constraint is “soft” as the scheduling engine will take the requirement into account insofar as it is possible. In the instance where it is not possible to fulfil the requirements of the soft constraint, the object may be scheduled outside the set parameters.

In the example illustrated below, a **Start Preference Pattern** has been created called *On the Hour Starts* this preference indicates that when scheduling, the user would prefer scheduling to take place on the hour (e.g. 9.00, 10.00, 11.00 etc.), rather than on the half-hour (9.30, 10.30, 11.30 etc.).

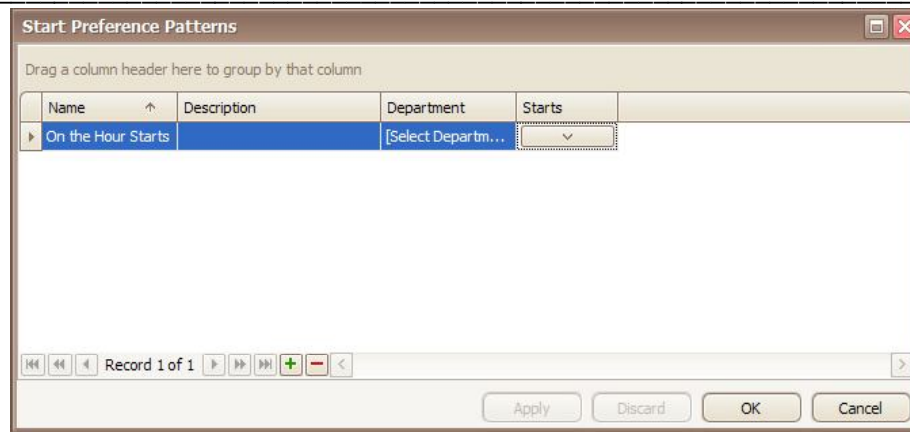


Figure 32 Start Preference Patterns editor

Clicking on the in the *Starts* column will open this control:

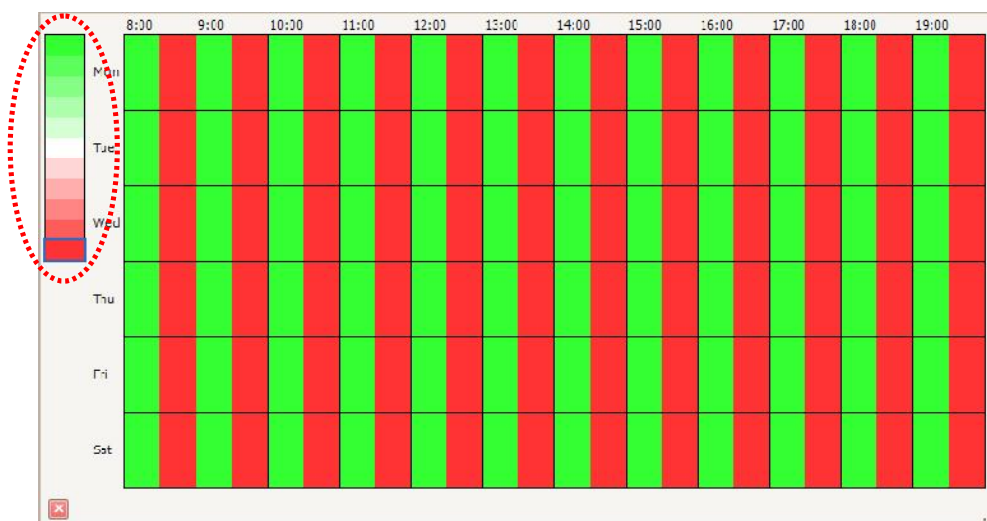


Figure 33 Describing the start preferences pattern

Using the palette (circled), the user can select different preference strengths with the darkest green being the strongest *preference* through to the darkest red being the strongest *aversion*.

Note that where an object may have both an **Availability Pattern** (hard constraint) and a **Preference Pattern** (soft constraint), the hard constraint will take precedence over the soft constraint – in other words, the scheduling engine must comply with the requirements of the hard constraint but not necessarily those of the soft constraint.

5.3 Usage Preference Patterns

Usage Preference Patterns work in the same way as the start preferences outlined above. In this instance however, they are used to put preferences or aversions against time blocks showing where the user would prefer activities or resources to be scheduled.

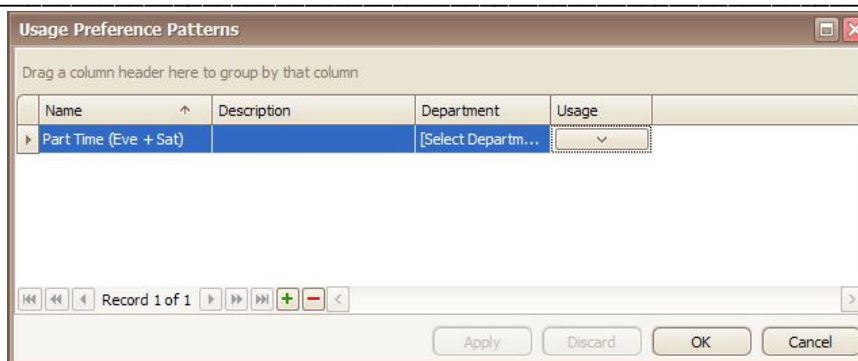


Figure 34 Usage Preference Patterns editor

Clicking on the in the *Usage* column opens a similar window to the start preferences window. The palette is used in exactly the same way as that outlined above.

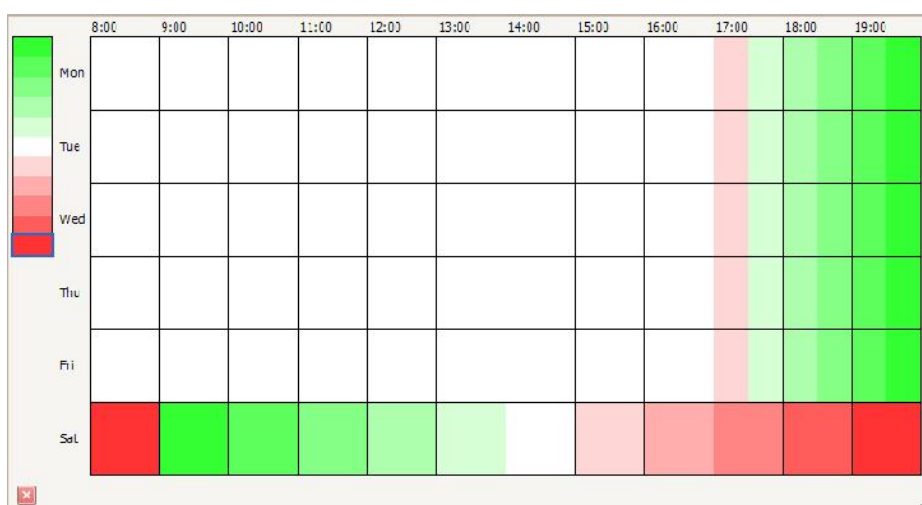


Figure 35 Describing the usage preference pattern

In this particular case, the preference shown is for activities (Part Time (Eve & Sat)) to be scheduled later rather than earlier in the evenings, but earlier rather than later on Saturday. Imagine this pattern superimposed on the **Availability Pattern** illustrated below and you will understand the requirements for scheduling activities that are Part Time (Eve & Sat).

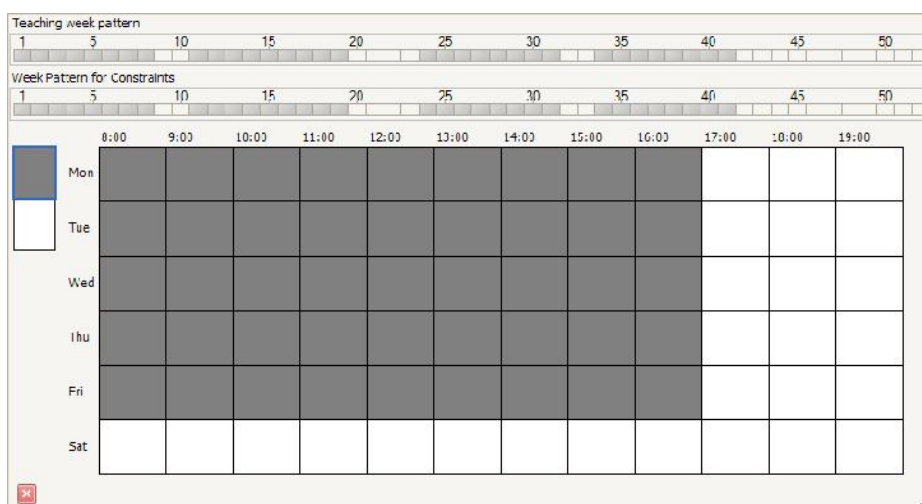


Figure 36 Availability pattern

5.4 Time Blocks

Time Blocks are created and used in conjunction with *Free Blocks*, *Resource Breaks*, *Maximum Hours* and *Maximum Workspans* to create **Constraint Profiles** which can then be applied to Resources.

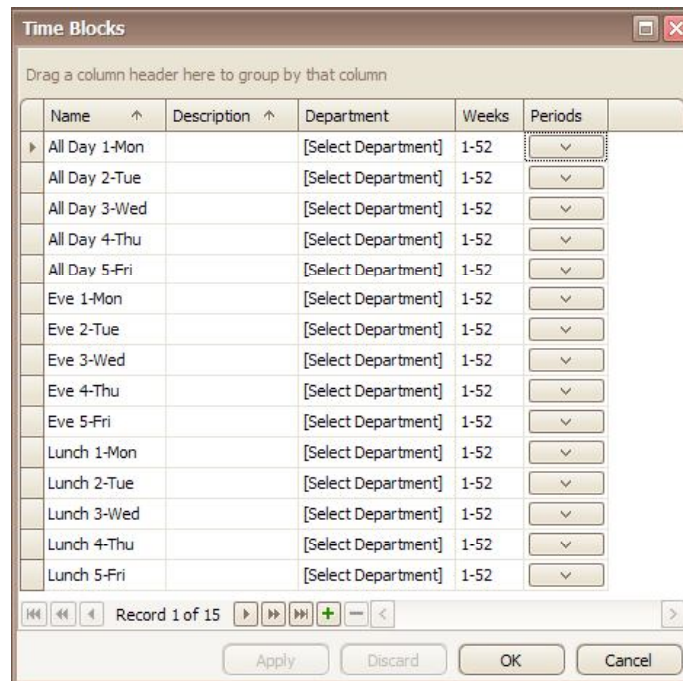


Figure 37 Time Blocks editor

Each **Time Block** represents a contiguous block of time within the week. Examples of *All Day* blocks, *Evening* blocks and *Lunch* blocks are illustrated below;

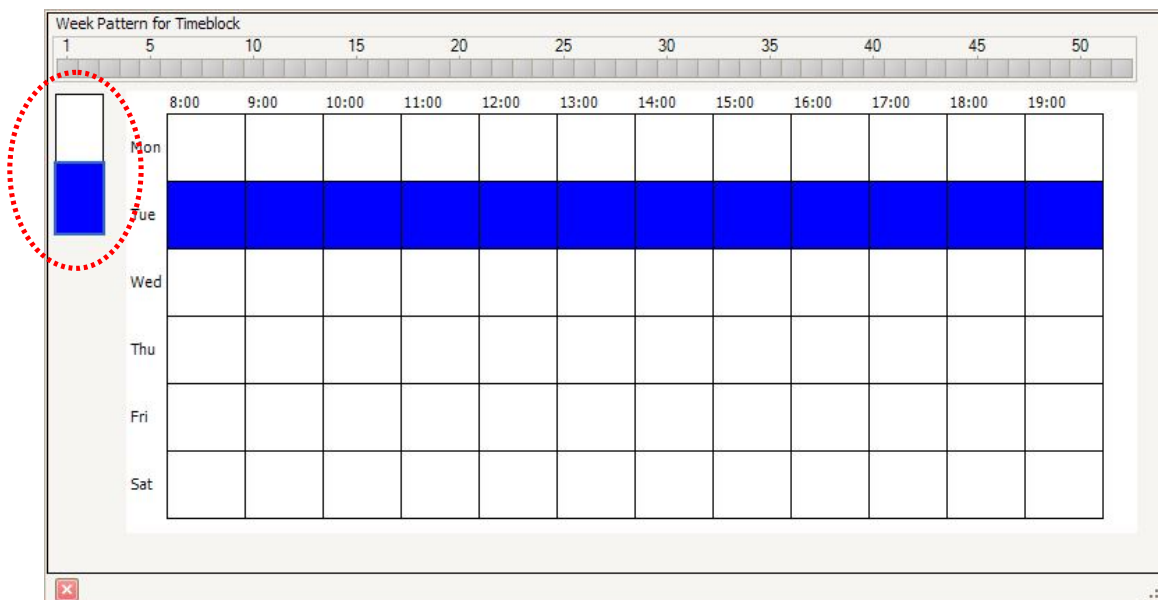


Figure 38 All day time block

Note that in this instance, the palette, (circled), used for “painting” the time blocks is blue.

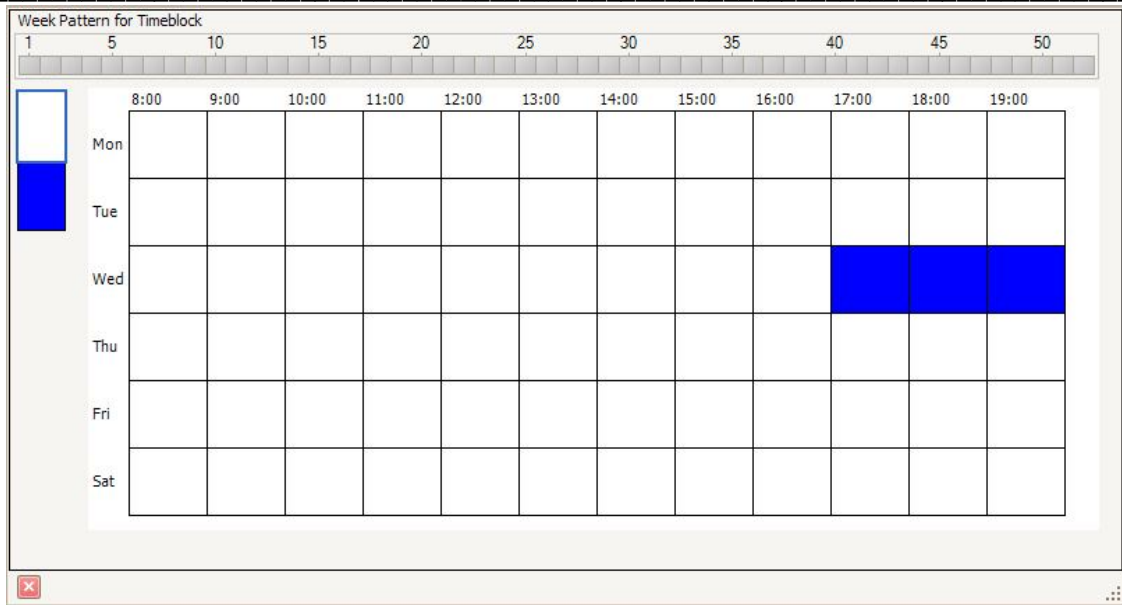


Figure 39 Evening time block

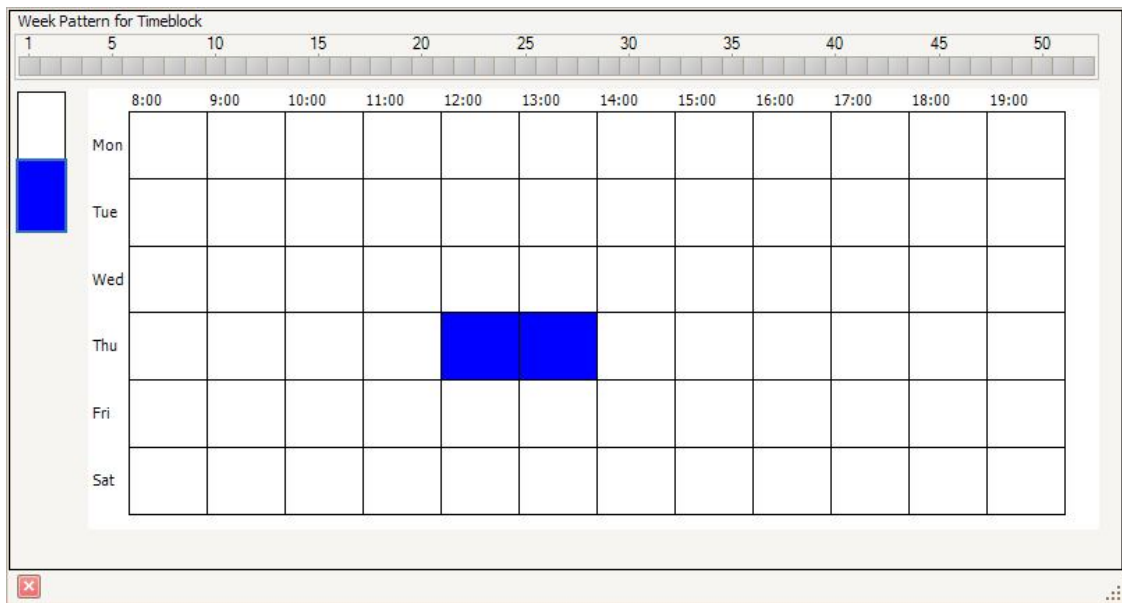


Figure 40 Lunch time block

5.5 Free Blocks

The **Free Blocks** constraint allows the setting up of a 'rule' that a certain number of time blocks from a defined selection should be left free. For example, there may be a requirement to ensure that each member of staff has one or two week days free, without specifying which days.

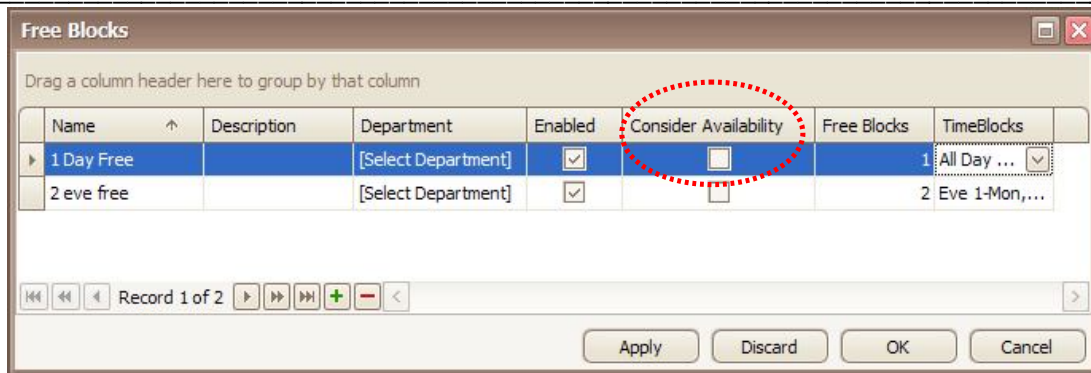


Figure 41 Free Blocks editor

Note the *Consider Availability* tick box. A resource may have an availability pattern which already allows the free day requirement – for example a part-time member of staff. When *Consider Availability* is *ticked*, the availability pattern is considered before determining whether the constraint has been satisfied. If the resource is unavailable for one or more whole days the scheduling engine will enforce free days in addition to those that are unavailable. If the box is *unticked* then the scheduling engine will interpret existing free days as satisfying the constraint whether or not they are available.

Clicking on the in the *TimeBlocks* column will open a **Multiple Selection Control** allowing the user to select the *All Day* time blocks. If, as in the example illustrated above, the requirement is that one of these time blocks should remain free, ensure that the number in the *Free Blocks* column is set to “1”.

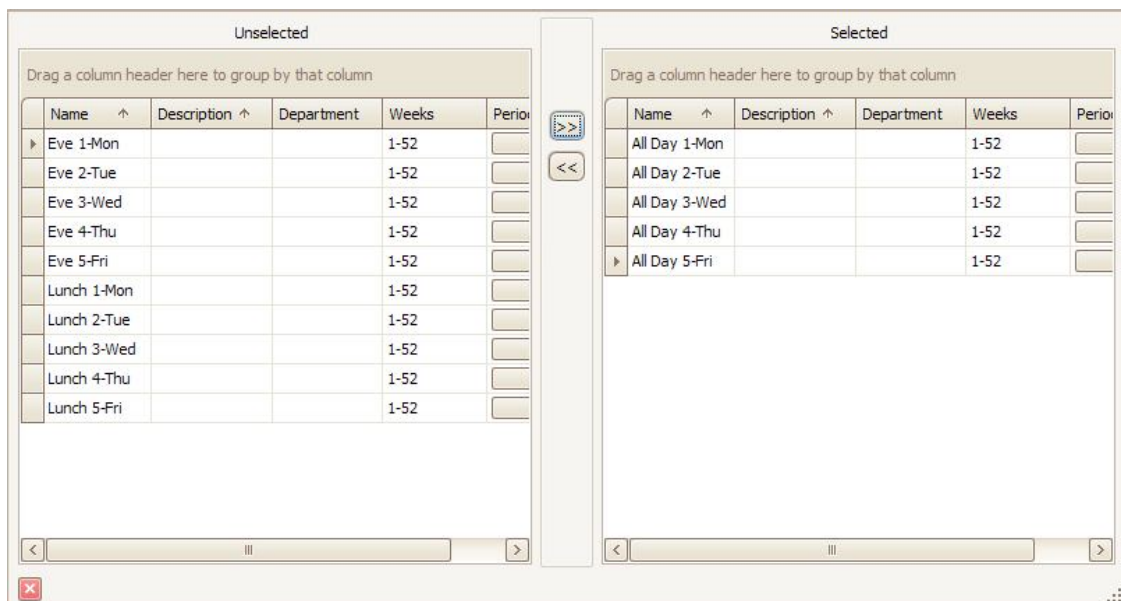


Figure 42 Selecting time blocks

5.6 Maximum Hours

The **Maximum Hours** constraint allows the setting of rules to specify the maximum number of hours a resource can be used within a time block; for example, to ensure that no member of staff is scheduled to teach for more than 6 hours in any one day.

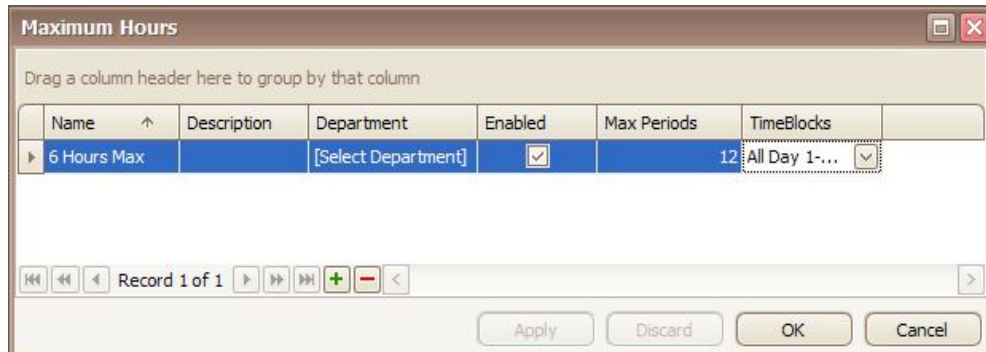


Figure 43 Maximum Hours editor

In the example illustrated above, the user has created a constraint entitled *6 Hours Max*. The *Maximum Periods* column has been set to 12 periods (each period is 30 minutes, therefore the total is 6 hours).

On opening the **Multiple Selection Control** from the *TimeBlocks* column, each of the *All Day* time blocks has been selected.

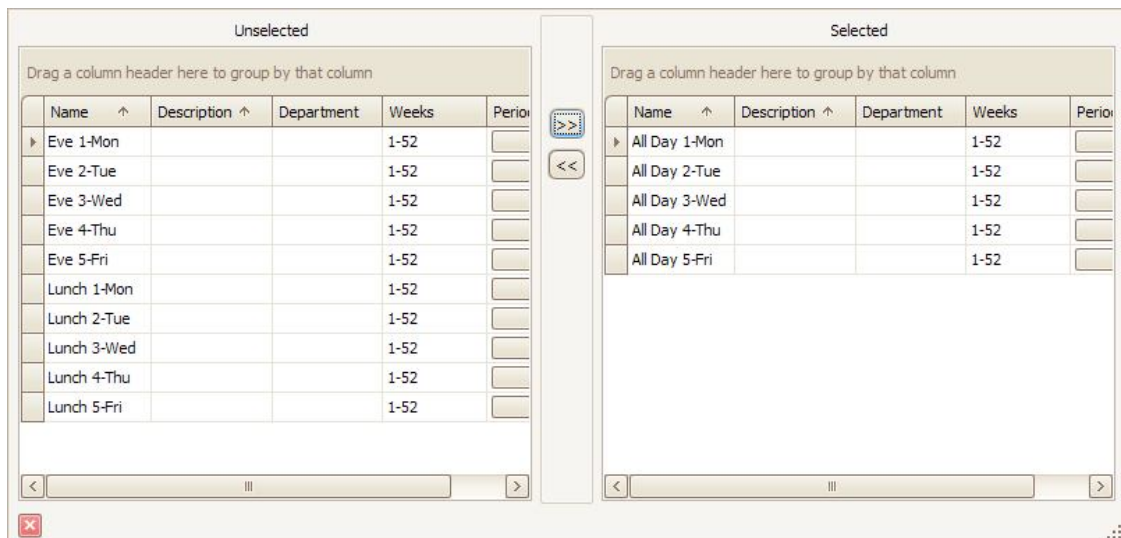


Figure 44 Selecting time blocks

5.7 Maximum Workspans

The **Maximum Workspan** constraint allows the user to impose a limit on the maximum number of hours that can be spanned by the activities of a resource. For example, to specify the work span for a member of staff working in the evenings, (i.e. the time from the start of their first activity to the end of their last) should span no more than 2 hours.

In the same way as described above, a constraint can be created by the user entitled *2 hour span (Eve)* and in the **Multiple Selection Control** window each of the *Eve* time blocks can be selected.

In the *Maximum Work Periods* column, the number of periods selected is 4 representing 2 hours.

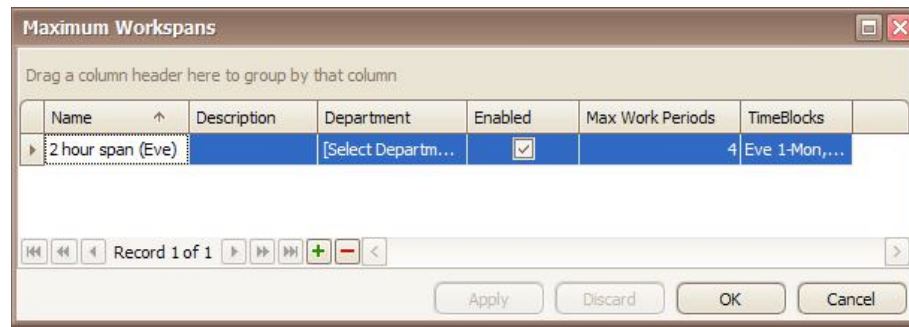


Figure 45 Maximum Workspans editor

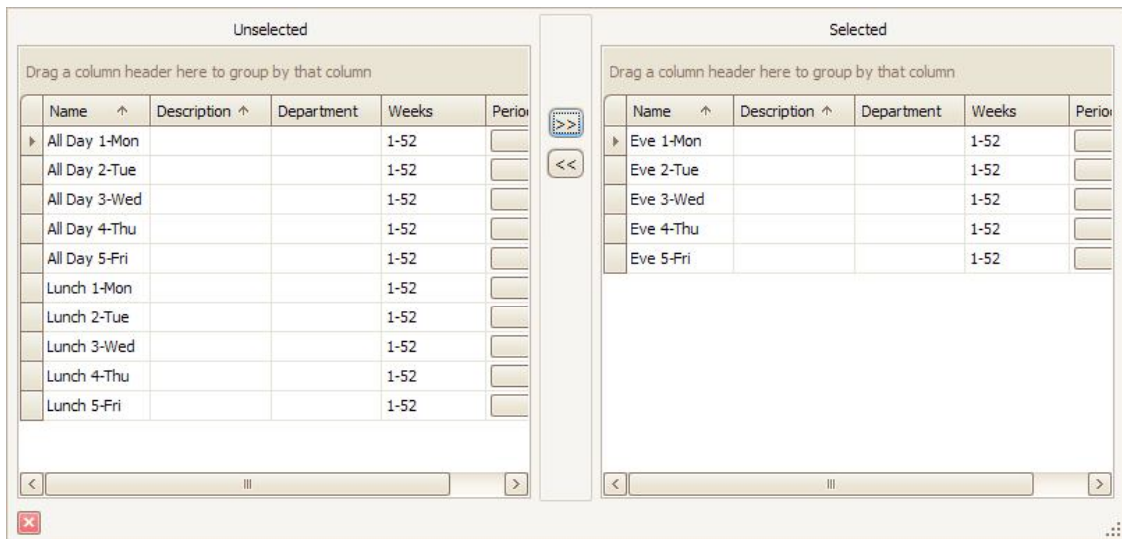


Figure 46 Selecting time blocks

5.8 Resource Breaks

Resource Breaks allows the setting of a break in the use of the resource. The duration of the break can be set, as well as the limits within which the break must occur. For example, staff must have a lunch break of at least 1 hour between 12.00 and 14.00.

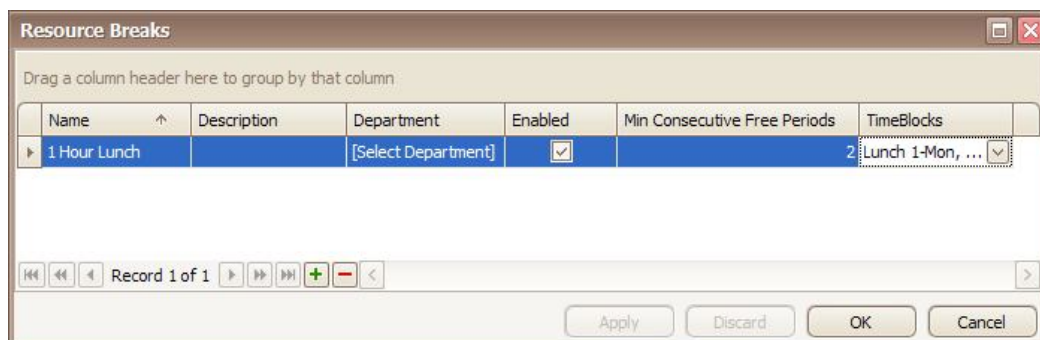


Figure 47 Resource breaks editor

The length of break that can be defined is dependent on the length of period used in the initial setup of the institution. Breaks can only be created using whole periods, so if your Institution is using half hour periods, the shortest available break is 30 minutes. In this instance, a 1 hour lunch is represented by 2 periods.

Clicking on the in the *TimeBlocks* column allows the user to select the required *Time Blocks* which in this instance are those designated as *Lunch*.

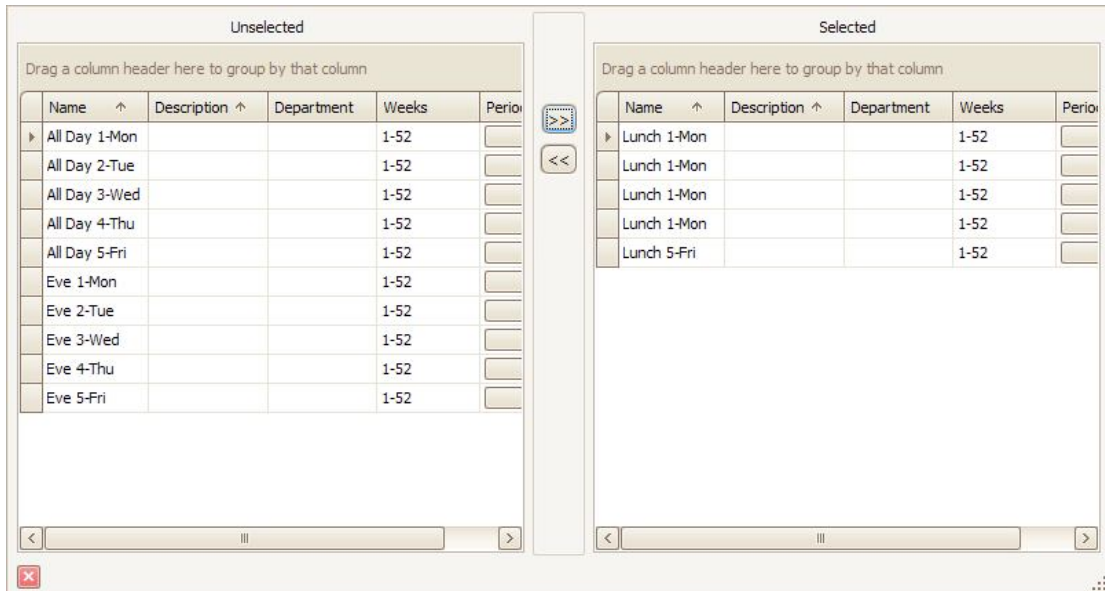


Figure 48 Selecting time blocks

5.9 Applying Time-Based Constraints

In order to link resources to the time constraints a **Constraint Profile** needs to be created. One or more **Constraint Profiles** can be attached to a resource, and each profile may have one or more constraints associated with it.

Using the techniques already described, a new **Constraint Profile** called *Staff Standard Day* has been created.

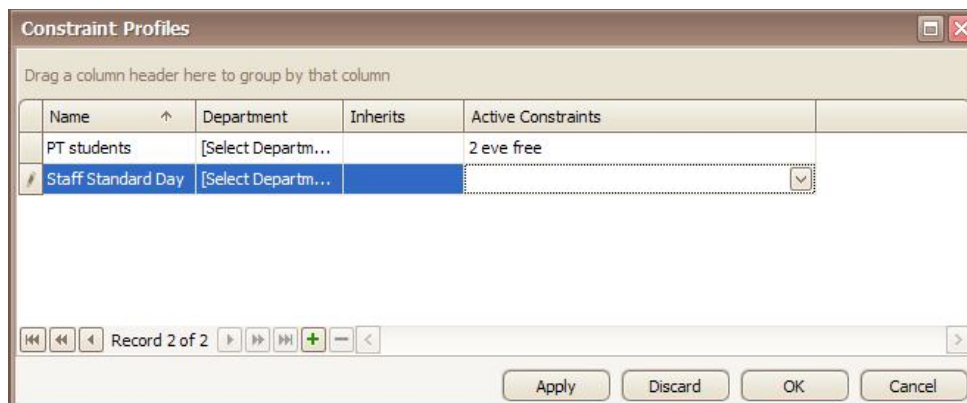


Figure 49 Constraint Profiles editor

Clicking on the in the *Active Constraints* column allows the user to apply the required time constraints to the *Staff Standard Day Constraint Profile*.

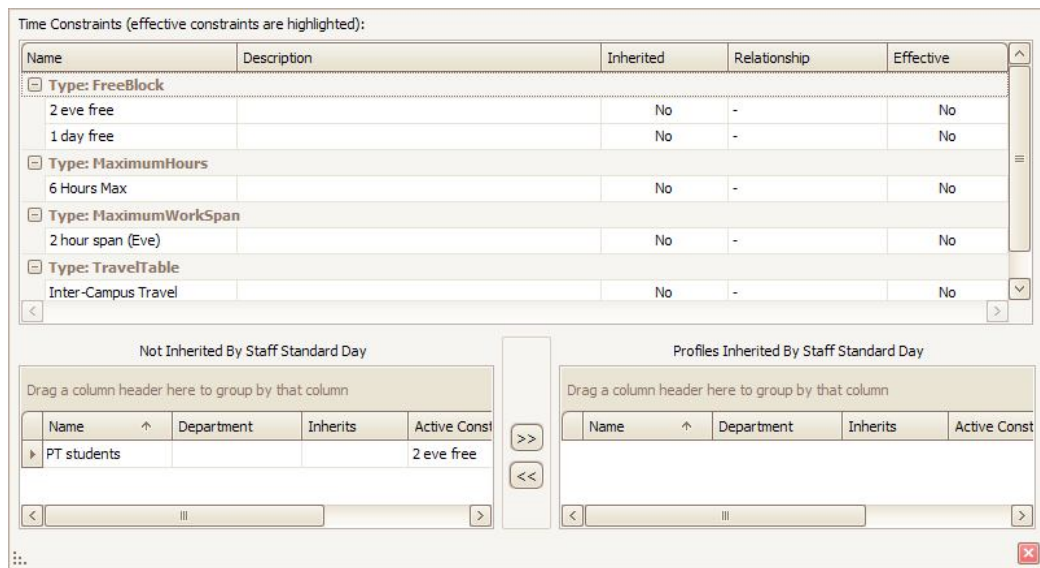


Figure 50 Time Constraints list

Selecting the *Relationship* column against the *Time Constraint* that need to be added to the profile and then clicking on the allows the user to select from a short menu.

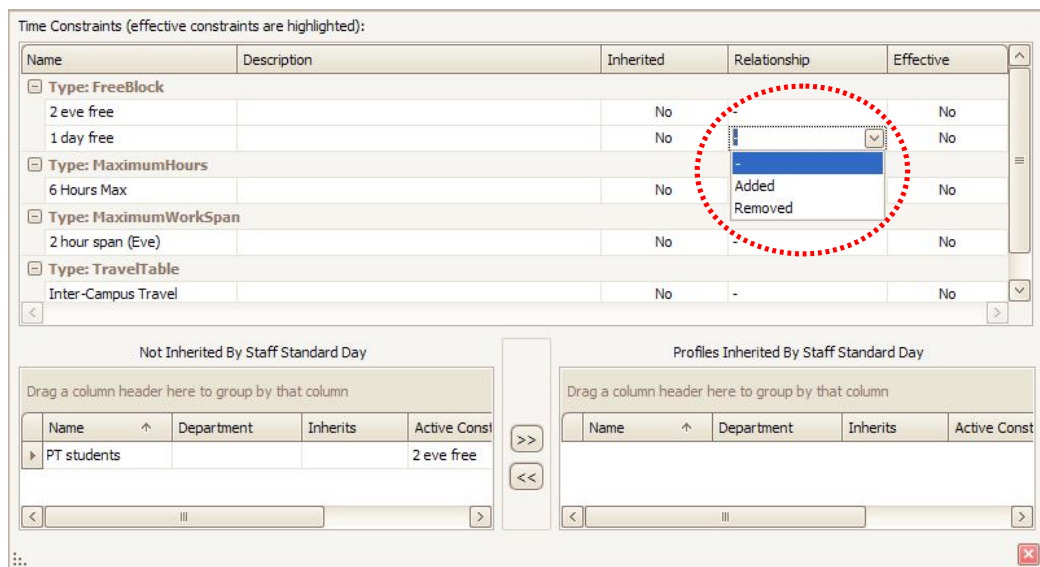


Figure 51 Adding a constraint to a profile

The relevant *Time Constraints* can be *Added*, *Removed* or simply ignored (-). When the *Time Constraint* has been *Added* the *Effective* column changes to *Yes*.

Time Constraints (effective constraints are highlighted):

Name	Description	Inherited	Relationship	Effective
Type: FreeBlock				
2 eve free		No	-	No
1 day free		No	Added	Yes
Type: MaximumHours				
6 Hours Max		No	Added	Yes
Type: MaximumWorkSpan				
2 hour span (Eve)		No	-	No
Type: ResourceBreak				
1 Hour Lunch		No	Added	Yes

Not Inherited By Staff Standard Day				
Drag a column header here to group by that column				
Name	Department	Inherits	Active Const	
PT students			2 eve free	

Profiles Inherited By Staff Standard Day				
Drag a column header here to group by that column				
Name	Department	Inherits	Active Const	

Figure 52 Time Constraints list with active constraints

5.10 Inheritance

Each **Constraint Profile** can *inherit* from other **Constraint Profiles**. For example, you may wish to create a profile that has some special constraints that only apply to certain staff. These constraints could be applied as a new **Constraint Profile**, and *in addition* the *Staff Standard Day* profile could also be applied as an *inherited* profile.

Rather than creating a new profile with the special constraints and then adding the existing constraints that already belong to the *Staff Standard Day* profile, you can simply state that the new profile also *inherits* the constraints from the original.

Inheritance is edited using the **Multiple Selection Control** at the bottom of the *Time Constraints* window illustrated below:

Time Constraints (effective constraints are highlighted):

Name	Description	Inherited	Relationship	Effective
Type: FreeBlock				
2 eve free		No	-	No
1 day free		No	Added	Yes
Type: MaximumHours				
6 Hours Max		No	Added	Yes
Type: MaximumWorkSpan				
2 hour span (Eve)		No	-	No
Type: ResourceBreak				
1 Hour Lunch		No	Added	Yes
Type: TravelTable				
Inter-Campus Travel		No	-	No

Not Inherited By Staff Standard Day				
Drag a column header here to group by that column				
Name	Department	Inherits	Active Const	
PT students			2 eve free	

Profiles Inherited By Staff Standard Day				
Drag a column header here to group by that column				
Name	Department	Inherits	Active Const	

Figure 53 Edit inherited profiles

5.11 Travel Tables

Travel Tables allow you to specify the time taken to travel from one zone or location to another when an institution has more than one campus, or even a single campus with significant travel time between different buildings.

Time must be allowed for both staff and students to travel where that is required. The constraints may be different for staff (perhaps travelling by car) and students (relying on public transport) and extra time may be required for some with special needs (for example, a student in a wheelchair).

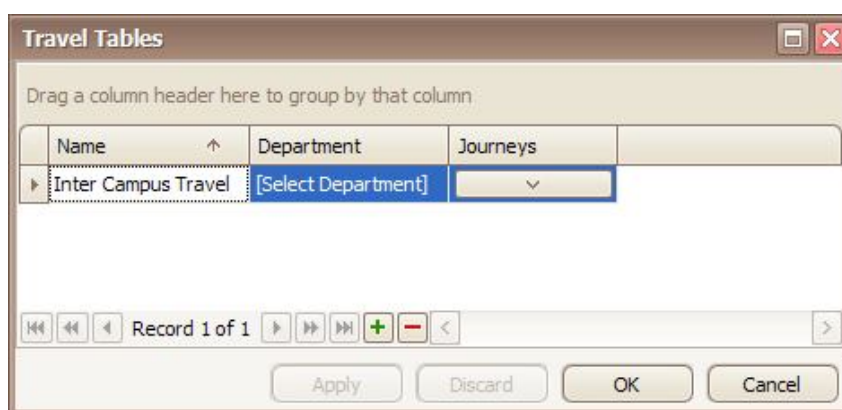


Figure 54 Travel Tables editor

Having created a named **Travel Table** using the standard procedure outlined above, it is necessary to add further information to define the requirements of the travel.

Clicking on the in the *Journeys* column opens up the following control:

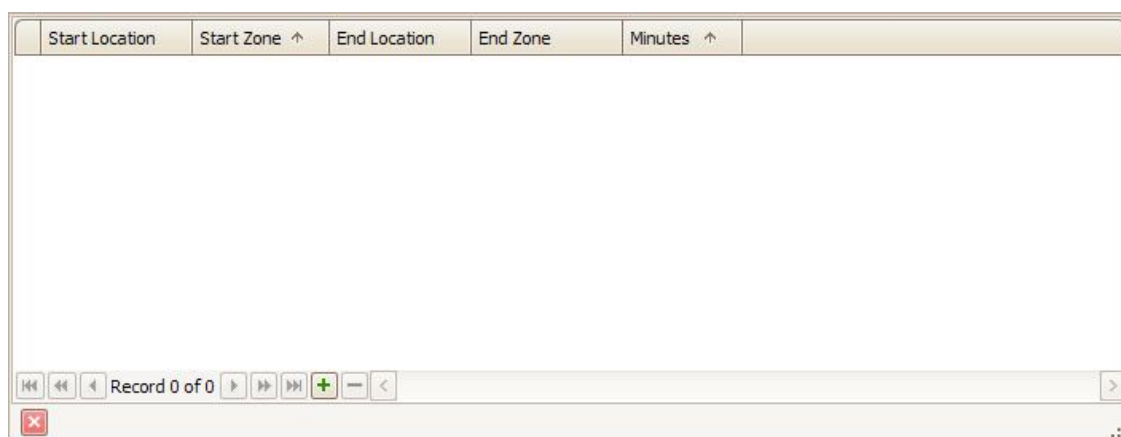


Figure 55 Journeys control

A *Journey* defines the travel time between two locations, two zones or a zone and a location. Use the *Append* button to add each new journey.

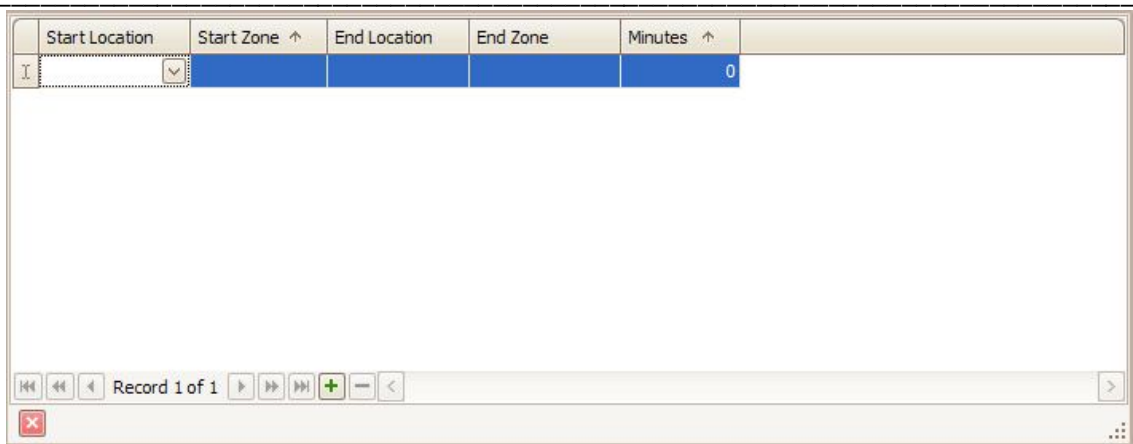


Figure 56 Journeys control with new journey added

Clicking on the in each of the columns allows the user to select the required *Locations* or *Zones* from the selection windows illustrated below;

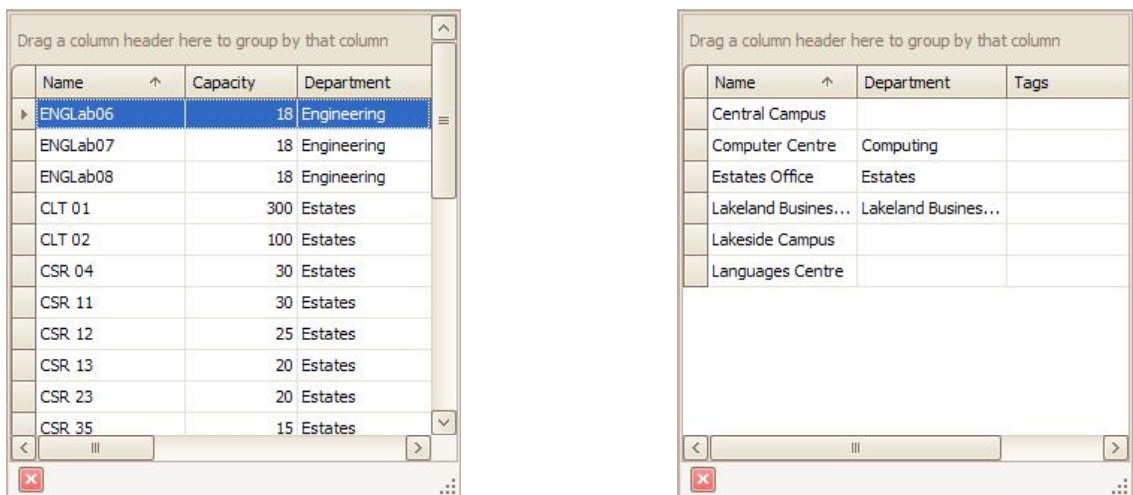


Figure 57 Locations and Zones selection lists

Having selected the required *Start & End Location* or *Start & End Zone*, the required duration of travel in minutes can be set. Note that you may select either a *Location* or a *Zone* as the *Start* point but not both. A similar constraint applies to the *End* point of the *Journey*.

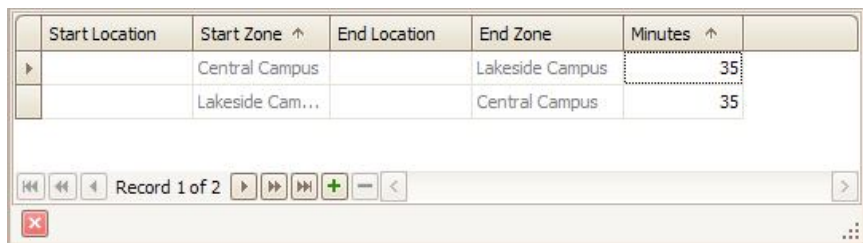


Figure 58 Journeys control with journeys defined

Remember, the travel tables will be influenced by the length of period selected for the institution. In the case illustrated above, where 30 minute periods are being used, the minimum travel time between campuses would be 1 hour. Where 15 minute periods were being used, the minimum travel time between campuses would be 45 minutes.

Travel times must be specified for both directions of each *Journey*. It may take longer to travel from A to B (uphill) than it does to travel (downhill) from B to A.

Where more than one travel time can be deduced from the table, the scheduling engine will use the most specific. If a Location to Location time is set this will be used in preference to the less specific Zone to Zone travel time.

5.12 Applying Travel Tables Constraints

In order to link the **Travel Table** constraint to resources, a **Constraint Profile** needs to be created. One or more **Constraint Profiles** can be attached to a resource, and each profile may have one or more constraints associated with it.

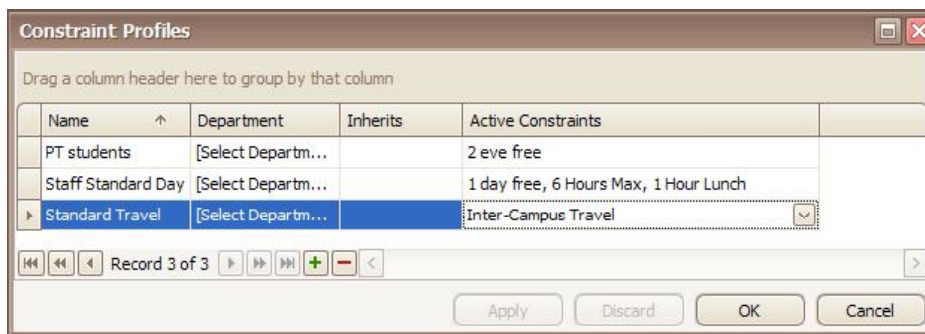


Figure 59 Constraint Profiles editor

In the instance illustrated above, a *Standard Travel* **Constraint Profile** has been created which could be applied to both the *Staff* and *Student Sets*.

In the case of *Staff*, if the *Travel Table* constraint is to be applied to all staff, it could become an *inherited* profile of the *Staff Standard Day* as illustrated below.

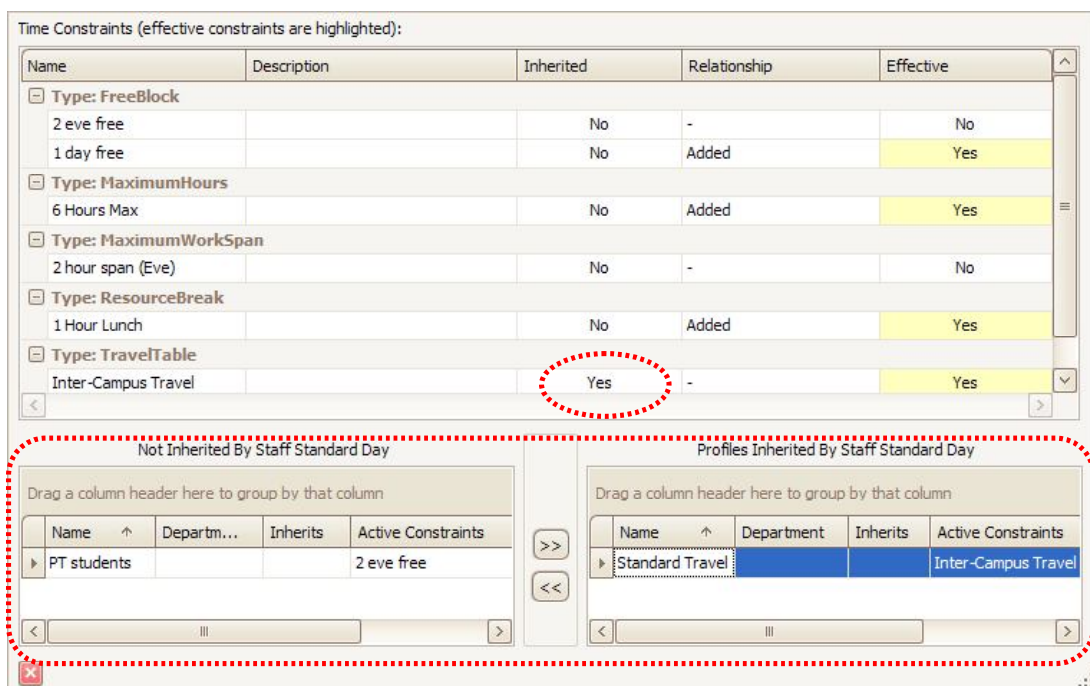


Figure 60 Constraint Profile with inherited profile

The **Constraint Profile** is applied to *Staff* using EDRDM.

Opening the **Staff** window allows the user to apply constraints using the *Constraint Profiles* column.

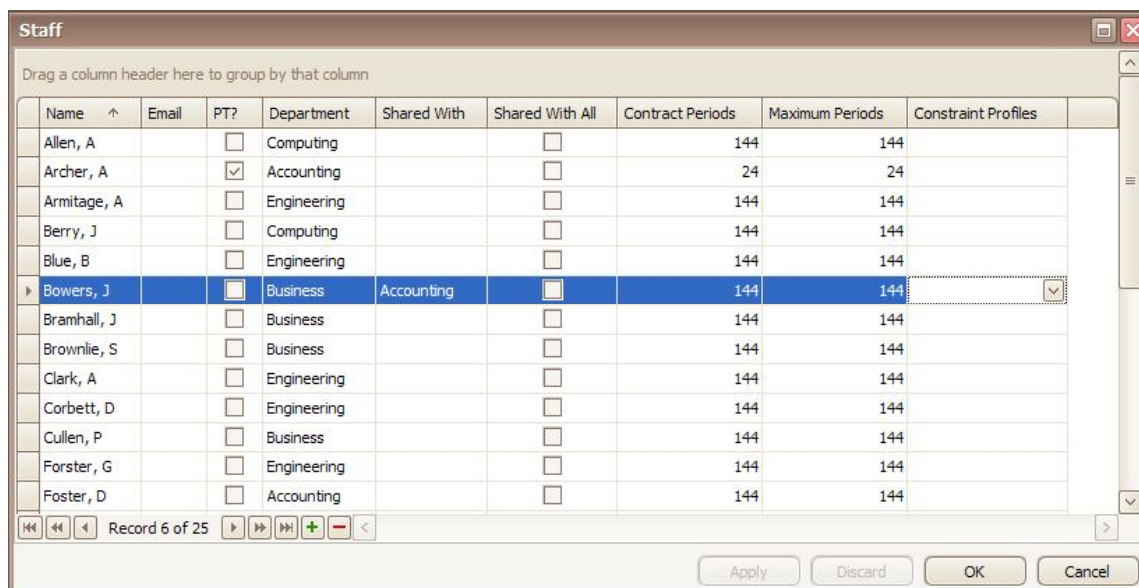


Figure 61 Adding a constraint profile to a member of staff

Clicking on the in the column opens up a **Multiple Selection Control** allowing the user to select the constraints that need to be applied.

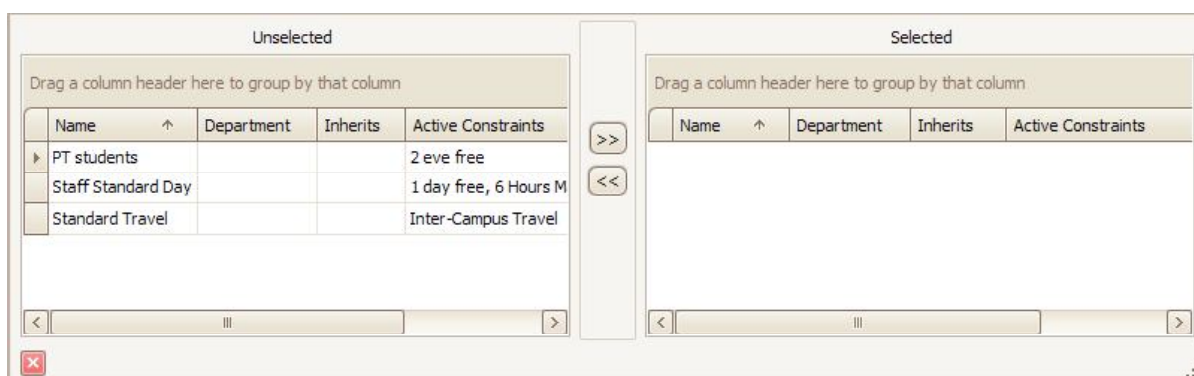


Figure 62 Selecting the constraint profile(s) to apply

Having applied the constraint to one member of staff, it can then be “copied down” using a click and drag operation to apply the same constraint to other staff members.

Staff

Drag a column header here to group by that column

Name ↑	Email	PT?	Department	Shared With	Shared With All	Contract Periods	Maximum Periods	Constraint Profiles
▶ Allen, A		<input type="checkbox"/>	Computing		<input type="checkbox"/>	144	144	Staff Standard ...
Archer, A		<input checked="" type="checkbox"/>	Accounting		<input type="checkbox"/>	24	24	Staff Standard Day
Armitage, A		<input type="checkbox"/>	Engineering		<input type="checkbox"/>	144	144	Staff Standard Day
Berry, J		<input type="checkbox"/>	Computing		<input type="checkbox"/>	144	144	Staff Standard Day
Blue, B		<input type="checkbox"/>	Engineering		<input type="checkbox"/>	144	144	Staff Standard Day
Bowers, J		<input type="checkbox"/>	Business	Accounting	<input type="checkbox"/>	144	144	Staff Standard Day
Bramhall, J		<input type="checkbox"/>	Business		<input type="checkbox"/>	144	144	Staff Standard Day
Brownlie, S		<input type="checkbox"/>	Business		<input type="checkbox"/>	144	144	Staff Standard Day
Clark, A		<input type="checkbox"/>	Engineering		<input type="checkbox"/>	144	144	Staff Standard Day
Corbett, D		<input type="checkbox"/>	Engineering		<input type="checkbox"/>	144	144	
Cullen, P		<input type="checkbox"/>	Business		<input type="checkbox"/>	144	144	
Forster, G		<input type="checkbox"/>	Engineering		<input type="checkbox"/>	144	144	
Foster, D		<input type="checkbox"/>	Accounting		<input type="checkbox"/>	144	144	

Record 1 of 25

Apply Discard OK Cancel

Figure 63 Staff editor with profile added

Linking *Student Sets* to **Constraint Profiles** will be undertaken in the **Enterprise Course Planner** (ECP) application.

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6 Glossary of Terms

Term	Description
Action Buttons	Where available, changes made to the data objects are confirmed or cancelled using the Action Buttons : <ul style="list-style-type: none"> • <i>Apply</i> confirms the change but keeps the selected window open. • <i>Discard</i> cancels the change and keeps the selected window open. • <i>OK</i> confirms the change and closes the selected window. • <i>Cancel</i> cancels the change and closes the selected window.
Activity	An Activity is an event which takes place at a scheduled time on a selected day. It may have <i>any</i> or <i>none</i> of the following resources: <ul style="list-style-type: none"> • It is delivered to a group of students (one or more Student Sets) • It takes place in a Location • It is taught by a member of Staff • It uses specified Equipment. It may take place as a one-off event (<i>ad-hoc</i> booking), or as a repeated event over a span of weeks, (a lecture each week during semester 1).
Append	When using the object windows in EDRDM, Append is used to <i>add</i> additional rows when creating new objects.
Availability Pattern	Availability Patterns represent a pattern of weeks, days and times that can be applied to activities in preparation for scheduling. Patterns are created as blueprints and then applied to the appropriate objects – Modules, Activities etc.. Availability Patterns applied to modules are inherited by activities that belong to the module.
Consider Availability	Applies to the Consider Availability? tick box in the Free Block time constraint window. A resource may have an availability pattern which already allows the free block requirement; (e.g. a part-time member of staff). When Consider Availability? is <i>unticked</i> , the scheduling engine assumes the Free Block constraint has been fulfilled. When it is <i>ticked</i> an additional free block will be granted.
Constraint Profile	A Constraint Profile is a way of grouping together a set of constraints that apply to a particular resource. For example, a staff member may have a set of time constraints and travel tables applied to his schedule.
Constraints	Hard Constraints are those that the software must comply with when scheduling, and are usually denoted by grey shading. Soft Constraints are <i>preferences</i> but the software need not comply with them if there are other overriding factors which have a greater influence when scheduling takes place. Soft constraints are usually denoted by shades of green and red. Using <i>time-based Constraints</i> allows the flexibility for example, to specify that no member of staff should teach in both the evening <i>and</i> the following morning, or a piece of equipment could be limited to a maximum of four hours use in any one day. Moreover, a student set could be constrained to no more than seven hours between the start of their first activity and the end of their last, or all staff members could have at least an hour for their lunch break between 12:00 and 14:00. Time-based constraints use Time Blocks which are denoted in blue.

Contract Periods	Contract Periods are the number of hours that resources are contracted to be used.
Delete	Delete is used to remove unwanted rows from object windows. Users should be aware of hierarchical delete – e.g. when deleting a Department , all objects belonging to that department will also be deleted.
Department	A Department is a sub-division of the Institution and may be used to represent Schools and Faculties as well as simple Departments (History, English, Chemistry, Humanities etc.).
Enterprise Authorisation Manager (AM)	Authorisation Manager (AM) is a central component of the Scientia Enterprise software suite. Authorisation Manager facilitates the creation of users, specification of user roles, and granting of user permissions across all the Enterprise applications. The purpose of Authorisation Manager is to define and control the level of access a user has to both applications and data within the Scientia range of software.
Enterprise Course Planner (ECP)	Enterprise Course Planner (ECP) allows the user to describe the opportunities for study being offered by the institution. The user may create Modules , and these may be combined to form Programmes of Study that can be offered to students. In addition, the software allows the user to describe how each module is delivered in terms of the Activities that each student must attend to complete the module. Based on the student demand, ECP will automatically generate a required number of activities to accommodate the students on each module. ECP tracks student demand as more data becomes available and flags to the user any discrepancies between the planned delivery and the demand.
Enterprise Timetabler (ET)	Enterprise Timetabler (ET) is a graphical interface for Syllabus Plus that enables the viewing and editing of timetables from a single comprehensive screen. The user is provided with a set of interactive panes which enable simple scheduling changes, information searches, and the provision of timetabling solutions. Users that are authorised to do so may switch to the Syllabus Plus image whenever they wish to use the functionality that is not available in Enterprise Timetabler . Conversely, a user may be restricted to using the ET interface only, thus preventing them from making changes to the underlying reference data. Any changes made in ET automatically update the underlying Syllabus Plus image. Writeback to the Scientia database is under user control.
Equipment	Items of Equipment are generally those which are not <i>permanent</i> features of a room that are used for the teaching activity; e.g. minibuses, cameras, laptops etc.
Free Blocks	The Free Blocks constraint allows the setting up of a “rule” that a certain number of time blocks from a defined selection should be left free. For example, there may be a requirement to ensure that each member of staff has one or two week-days free, without specifying which days.
Inheritance	Each constraint profiles can <i>inherit</i> from other constraint profiles. For example, you may wish to create a profile that has some special constraints that only apply to certain staff. These constraints would apply in addition to those that have been applied as “Staff Standard”. Rather than creating a new profile with all the previously applied constraints and then adding the additional constraints, you can simply state that the new profile inherits from the original.
Institution	The Institution is the university, college, school, education centre etc. to which the data objects belong. The <i>Institution Setup</i> governs the times, days and weeks that activities can be scheduled.

Location	A teaching space. Usually a room, lecture theatre, lab etc., but could also refer to sports pitches, stables etc. where teaching activities take place.
Maximum Hours	The Maximum Hours time constraint allows the setting of rules to specify the maximum number of hours a resource can be used within a time block; for example, to ensure that no member of staff is scheduled to teach for more than 5 hours in the same day.
Maximum Periods	Maximum Periods time constraint denotes the maximum hours resources are allowed to be used. This is calculated as contracted hours, plus any allowable additional hours.
Maximum Workspans	The Maximum Work Span time constraint allows the imposition of a limit on the maximum number of hours that can be spanned by the activities of a resource. For example, to specify the working day for a member of staff, (i.e. the time from the start of their first activity to the end of their last) should span no more than 7 hours.
Module	A Module can be defined as a discrete unit of study or subject to be covered. A student will normally study a group of modules, (Programme of Study), during each year in order to gain a qualification. The module may be taught by combining several different types of Activities (e.g. lectures, seminars, tutorials and practicals), each of which could be of differing sizes (e.g. lectures could be attended by 60 students at a time, but tutorials may only contain a group of 10 students).
Multiple Selection Control	Multiple Selection Controls become available when the user wishes to select a small number of items from a longer list of objects.
Period	The duration of an activity is based on multiples of the period length. With 30 minute periods for example, the possible duration for an activity can only be; ½ hour, 1 hour, 1 ½ hours, 2 hours, etc...
Pooled Resources	The Pooled Resources window can be used to list items of equipment such as cameras, laptop computers, protective clothing, microscopes etc., where more than one item may be needed simultaneously by an activity. The user can then allocate a number of items to an Activity from the Pools tab rather than selecting several pieces of equipment from the Resources tab.
Preset	Preset is used to specify one or more members of staff, locations or items of equipment.
Programme of Study	For each year of a student's course, a Programme of Study is set up which usually consists of a set of Modules for which a student can enrol. It may be that some modules must be taken as part of that Programme (core modules) and other modules are optional.
Refresh	Refresh is the process by which the client is kept informed of changes made by other clients to the central database (when they Write-back). The SDB keeps track of all changes, and when they were made so that it always knows what has changed since the client was last refreshed. Refresh takes place <i>under user control</i> .
Resource Breaks	Resource Breaks allow the setting of a break in the use of resources. The duration of the break can be set, as well as the limits within which the break must occur.
Resources	Resources consist of Staff , Locations and Equipment and are used when scheduling activities to create a clash-free timetable. Resources can be <i>Preset</i> or <i>Wildcarded</i> depending on the requirements of the activity and the user.

Scientia Database (SDB)	The Scientia Database (SDB) allows multiple users to share a set of data. Each user or client has their own image of the data installed on their local computer, however, the difference is that the image can be connected to a central database. When the client is connected, the two versions of the data are synchronised with each other by two processes; Refresh and Write-back .
Suitability	Suitability is a way of describing the characteristics of a resource and can be applied to locations, staff and equipment. Suitabilities are used when activities are created and scheduled, allowing us to guide the software in choosing the type of resource that should be used to meet the needs of the activity. When setting up activities, we can use suitabilities in two ways: <ul style="list-style-type: none"> • To help us obtain a 'shortlist' of suitable resources, thereby simplifying the decision on which resources we want to use. • To 'wildcard' resourcing, letting Syllabus Plus choose which resource to use, within the suitabilities selected In simple terms a Suitability is a common attribute shared by one or more resources.
Time Blocks	Time Blocks are defined blocks of time that are used to set up <i>Time Constraints</i> . They are created using continuous blocks of time and can range from single Periods to whole day blocks.
Travel Tables	Travel Tables allow the user to specify the time taken to travel from one zone or geographical area to another. Travel Tables are applied using Constraint Profiles .
Web Room Booking (WRB)	An additional Enterprise Application designed to facilitate the creation of ad-hoc bookings by occasional users via a browser interface.
Wildcard	Wildcard allows one or more members of staff, locations or items of equipment to be allocated automatically from the selected Suitability group, (users may select multiple Suitabilities at the same time). This allows maximum flexibility when scheduling the activity.
Writeback	Write-back is the process by which the client user updates the central database with changes made to their local image. The local image holds information about when the last Write-back was performed and knows what changes, if any, have taken place since then. At the next Write-back these changes are conveyed to the central database. By default, Write-back takes place only when the client user issues a specific instruction by clicking the Writeback button. This gives the client the freedom to experiment by making changes to their local image, which may or may not be written back, depending on the outcome of their changes.
Zones	The Zones window is used to define geographical areas of the institution, for example different campuses, different buildings on the same campus, or even different floors of the same building.