

# TOSHIBA

Leading Innovation >>>

## VRF Selection Tool Software

v1.2.19



*Better Air Solutions*

Toshiba Carrier Corporation  
TCEU Pre-Sales Division  
October 26, 2018

|                            |                             |
|----------------------------|-----------------------------|
| <b>Scope of Disclosure</b> | Distributions               |
| <b>Owner</b>               | Toshiba Carrier Corporation |

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# 1. Introduction



- VRF System Design
  - Indoor Units
  - Outdoor Units
  - Accessories
  - Controls
- Capacities, pipes... calculation
- Equipment list
- System check according to the specifications
- PDF, CAD and Excel Outputs

# 1. Introduction

| Item                | Description  |
|---------------------|--|
| OS                  | Microsoft Windows 7<br>Microsoft Windows 8.1<br>Microsoft Windows 10<br>* Windows 10, only while devices are supported       |
| CPU                 | As recommended by your OS, or better   |
| Memory              | As recommended by your OS, or better   |
| Display             | Selection Tool mode: FWXGA (1366 x 768) resolution<br>Floor Plan Mode: UXGA (1600 x 1200) resolution<br>High Color or better |
| Hard disk           | * Microsoft .NET, Framework 4.6 are separate   |
| Required components | <b>Microsoft .NET, Framework 4.6 (will be installed if you don't have it)</b>  |
| Required software   | Microsoft Excel 2010 / 2013 / 2015<br>Reader or browser that can view and print PDF files                                    |
| Internet            | Online connection required in order to register the license  |

# 1. Introduction

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## **Current Status:**

- Released on 26/10/2018
- Selection Tool goes Global
- Software is ready
  - Already beta tested on the field
  - Similar to AIRS for a smooth transition
  - Translations and Sales Data are pending
  - Same features and more
- Server is working
  - Registrations and activations are online
- GPDR compliance

# Index

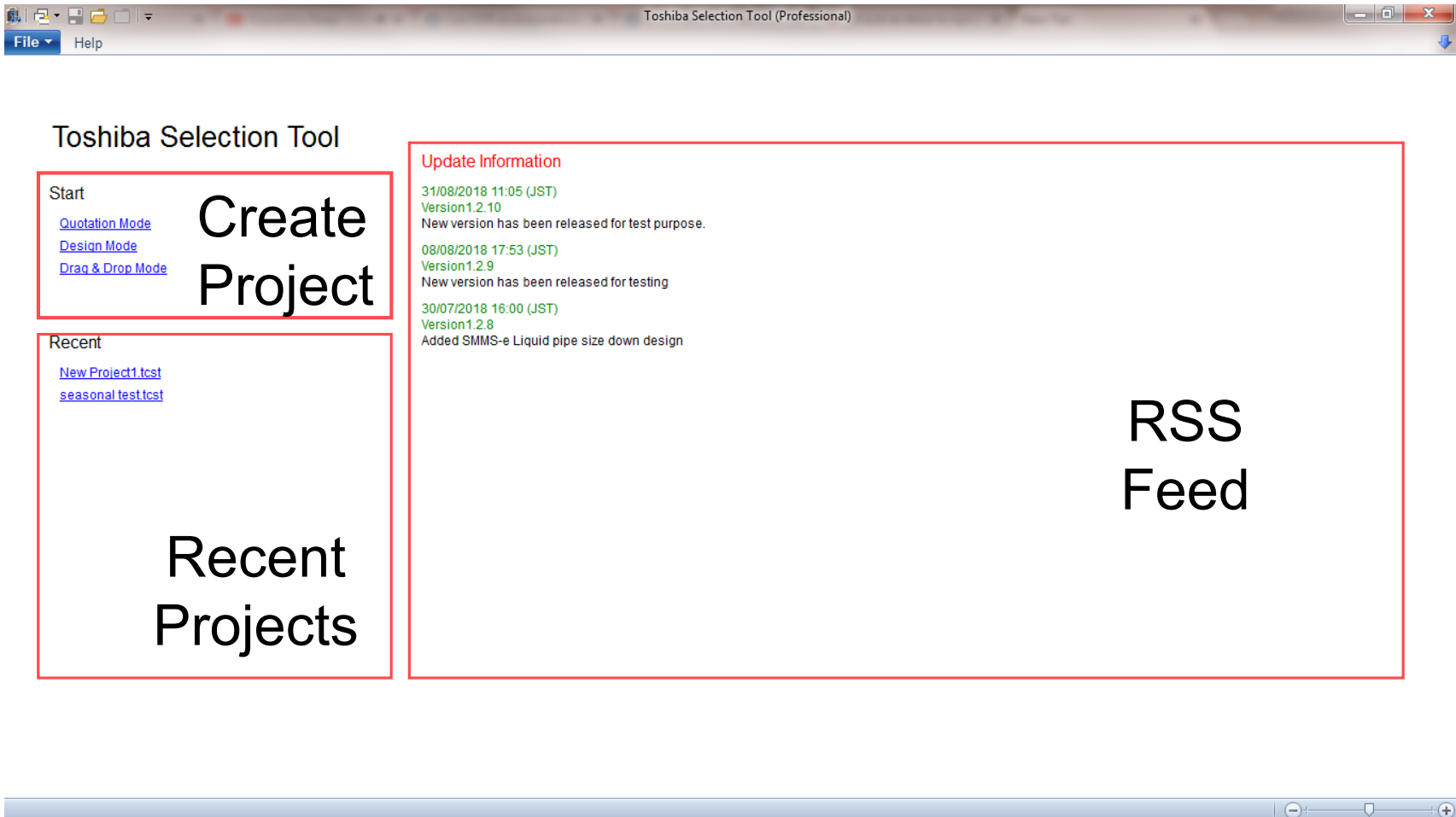
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1. Introduction
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## 2. Set up

### Start up page:










The following window displays when you start the software



## 2. Set up

### File menu:

The following window displays when clicking on File menu:

|   |                     |
|---|---------------------|
|  New Project           | Create Project      |
|  Save                  | Save Options        |
|  Save as               |                     |
|  Open                  | Open & Save Options |
|  Close (View Top Page) | Options             |
|  Print / Export       | Create Outputs      |
|  Import              | Combine projects    |
|  Setting             | Software Settings   |
|  Exit                | Close Software      |

The 'Print / Export' and 'Setting' items in the File menu are linked by red arrows to the 'System import' dialog box and the 'Application Settings' menu, respectively.

**System import dialog box:**

Please select import system.

|                                     | System Name |
|-------------------------------------|-------------|
| <input type="checkbox"/>            | smmse       |
| <input checked="" type="checkbox"/> | mini        |
| <input checked="" type="checkbox"/> | 3 pipe      |

Buttons: OK, Cancel

**Application Settings menu:**

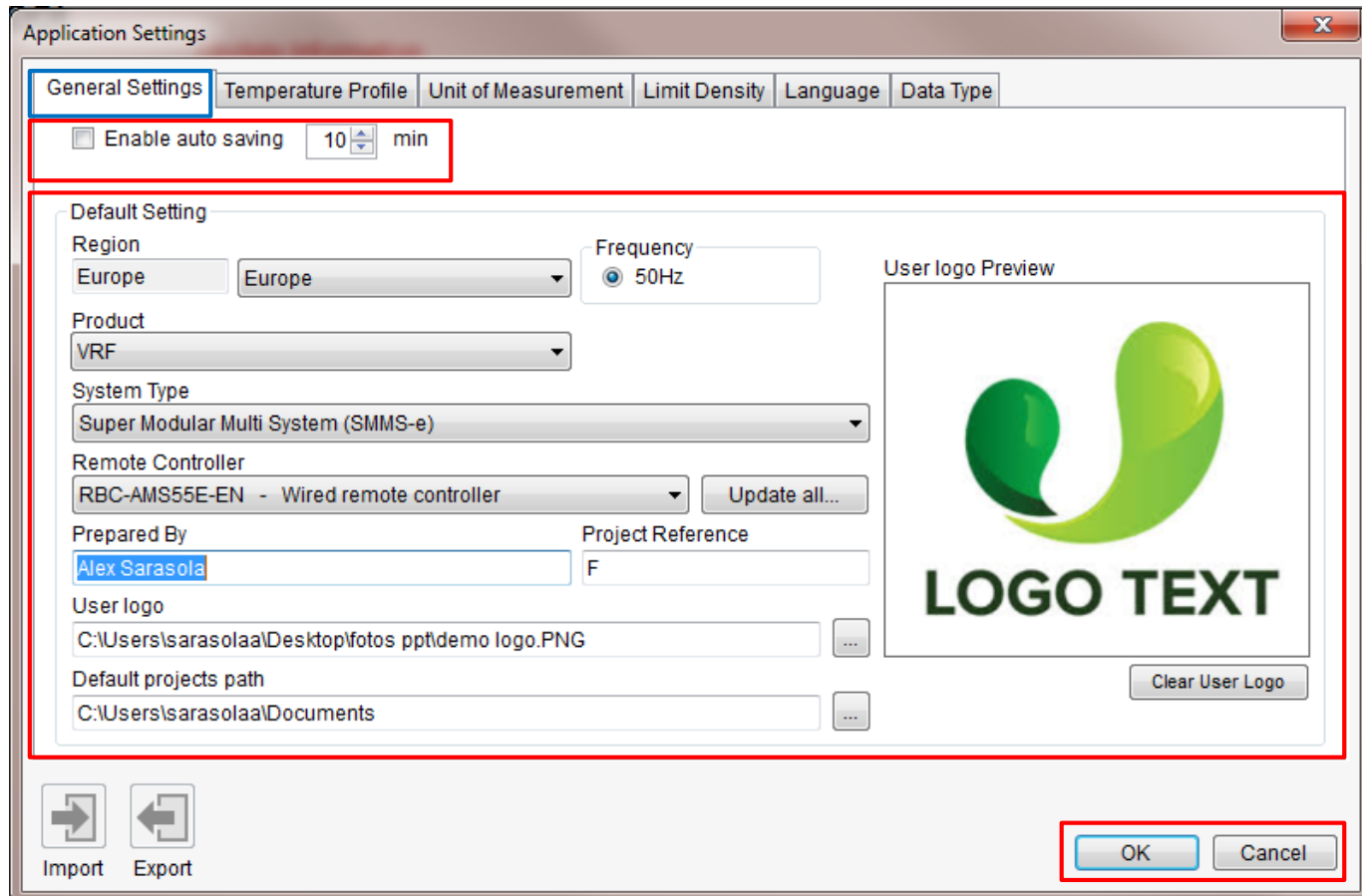
- Application Settings
- Client Data
- Unit Pricing
- Proxy Option
- Submittal Document



## 2. Set up

### Application Settings:

Open applications settings to configure the software and set default settings:



## 2. Set up

# Application Settings:

Set the default temperature conditions for new projects:

The screenshot displays the 'Application Settings' dialog box with the 'Temperature Profile' tab selected. The 'Temperature Settings' section is highlighted with a red box and contains the following data:

| Category                                  | Parameter                 | Value | Unit |
|---|---------------------------|-------|------|
| Internals                                 | Cooling Dry Bulb          | 27.0  | °C   |
|   | Cooling wet Bulb          | 19.0  | °C   |
|   | Cooling Relative Humidity | 47    | %    |
|   | Heating Dry Bulb          | 20.0  | °C   |
| Outdoors                                  | Cooling Dry Bulb          | 35.0  | °C   |
|   | Heating Wet Bulb          | 6.0   | °C   |
| All Fresh Air Intake : Outside Air Supply | Cooling wet Bulb          | 28.0  | °C   |
|   | Heating Dry Bulb          | 0.0   | °C   |

The 'Predefined Temperature Profiles' section is also highlighted with a red box. It includes an 'Edit profiles...' button and a 'Units' section with radio buttons for 'Metric(°C)' (selected) and 'Imperial(°F)'. A red arrow points from the 'Edit profiles...' button to a secondary dialog box.

The secondary dialog box, titled 'Profile Description', is also highlighted with a red box. It contains the same 'Temperature Settings' data as the main dialog box, including the 'Internals', 'Outdoors', and 'All Fresh Air Intake : Outside Air Supply' sections. It also features a 'Units' section with 'Metric(°C)' selected and a 'Close' button at the bottom right.

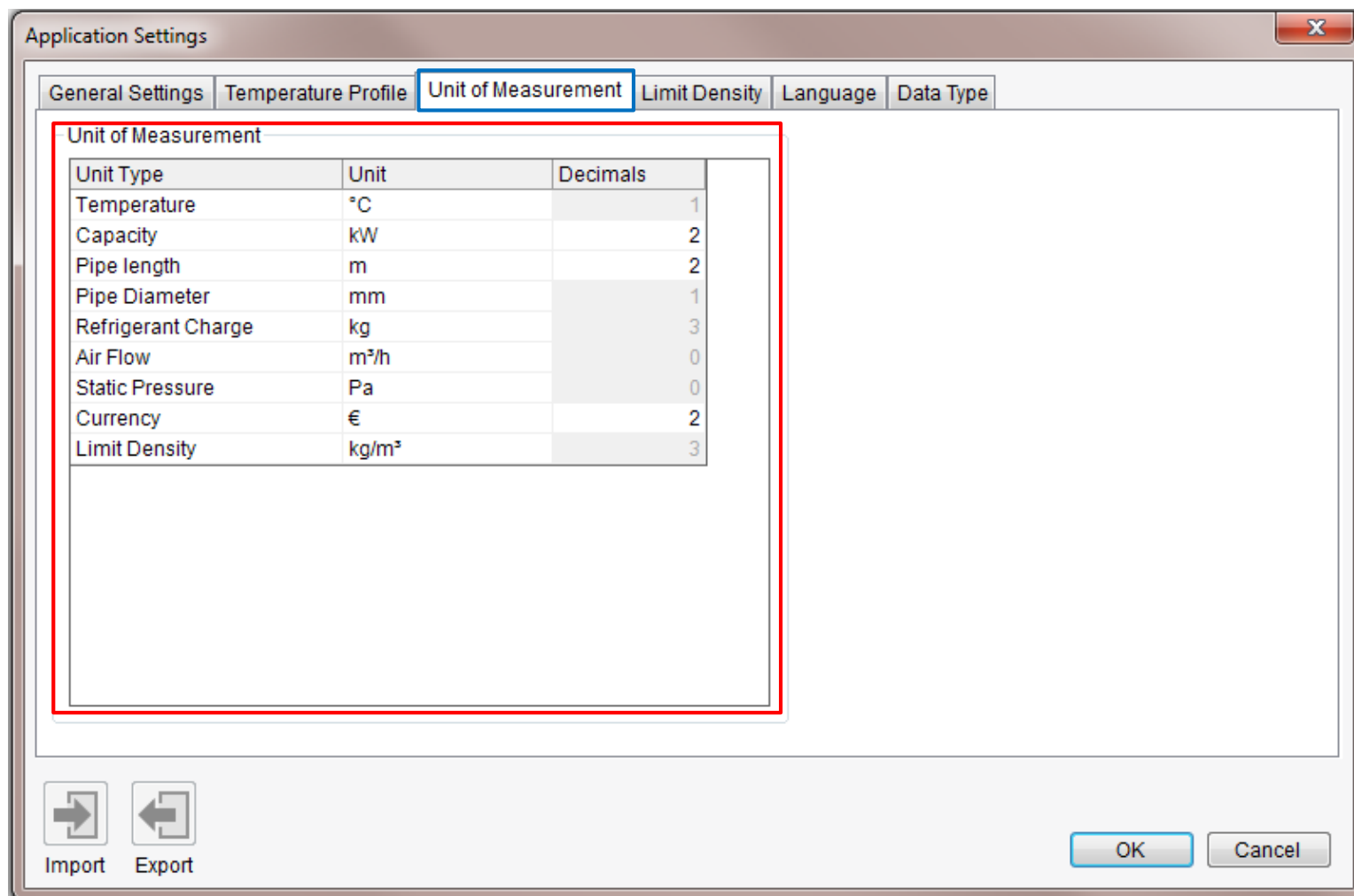
At the bottom of the main dialog box, there are 'Import' and 'Export' buttons. A red box highlights the 'Export' button with the following text:

Export the temp as an Excel file in order to edit the list

## 2. Set up

### Application Settings:

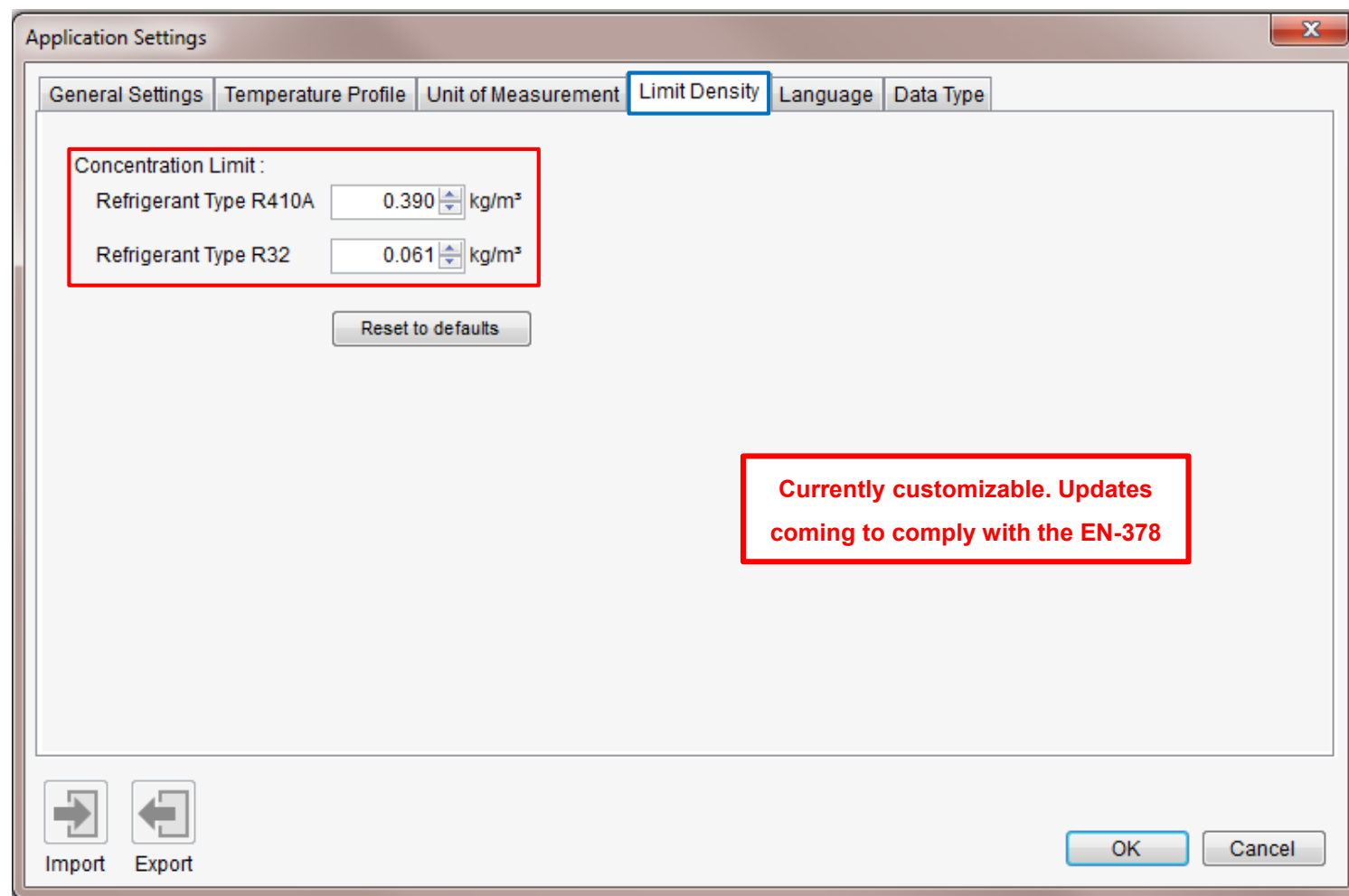
Select the default units the software will use:



## 2. Set up

### Application Settings:

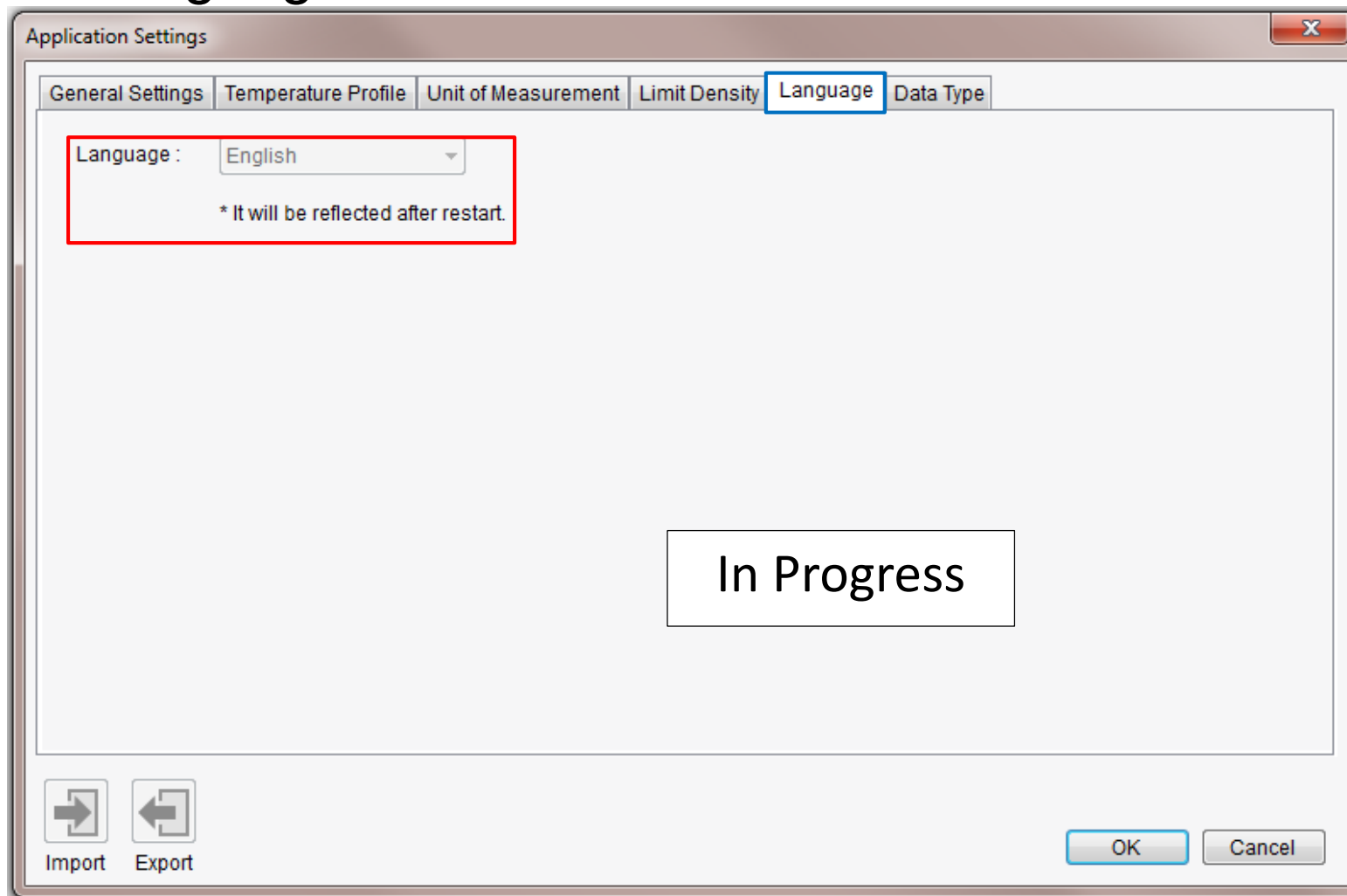
Set the limit density values for the software



## 2. Set up

# Application Settings:

## Set the language for the software



## 2. Set up

### Client data:

Save the clients data profiles to be used on the output:

The screenshot shows a software interface for entering client data. The interface is divided into three main sections:

- Left Sidebar:** A tree view showing the company structure. The selected item is "Sample Company.co.ltd".
- Top Form:** A form for entering client details. The fields and their values are:
  - Company Name: Sample Company.co.ltd
  - Add1: sampleAdd-1
  - Add2: sampleAdd-2
  - Add3: sampleAdd-3
  - Town/City: SamplesTown
  - County: SamplesCounty
  - Post Code: 111-222
  - Country: United States
  - Contact: D.J.Trmp
  - TelNo: 555-0000-1111
  - Email: trmp@samplehouse.com
- Bottom Table:** A table titled "Locations/Sites" with an "Edit Locations..." button. The table has the following data:

| Description | Add1  | Town/City   | TelNo         |
|-------------|-------|-------------|---------------|
| Loc-1       | add-1 | sample Town | 555-0000-2222 |
| Site-1      | add-2 | sample City | 555-0000-3333 |

## 2. Set up

### Unit pricing:

Edit the price list for all the Carrier units and accessories

Client: <default price list> Client Database Show All Indoor/Outdoor Unit Accessories

Search: Clear Reset price to default Reset ALL prices to default Zero ALL prices

| Model Number     | Type        | Description    | Item Price (€) |
|------------------|-------------|----------------|----------------|
| MMU-AP0094HP1-E  | Indoor Unit | 4-way Cassette | 0.00           |
| MMU-AP0094HP1-TR | Indoor Unit | 4-way Cassette | 0.00           |
| MMU-AP0124HP1-E  | Indoor Unit | 4-way Cassette | 0.00           |
| MMU-AP0124HP1-TR | Indoor Unit | 4-way Cassette | 0.00           |
| MMU-AP0154HP1-E  | Indoor Unit | 4-way Cassette | 0.00           |
| MMU-AP0154HP1-TR | Indoor Unit | 4-way Cassette | 0.00           |
| MMU-AP0184HP1-E  | Indoor Unit | 4-way Cassette | 0.00           |
| MMU-AP0184HP1-TR | Indoor Unit | 4-way Cassette | 0.00           |
| MMU-AP0244HP1-E  | Indoor Unit | 4-way Cassette | 0.00           |
| MMU-AP0244HP1-TR | Indoor Unit | 4-way Cassette | 0.00           |
| MMU-AP0274HP1-E  | Indoor Unit | 4-way Cassette | 0.00           |
| MMU-AP0274HP1-TR | Indoor Unit | 4-way Cassette | 0.00           |
| MMU-AP0304HP1-E  | Indoor Unit | 4-way Cassette | 0.00           |
| MMU-AP0304HP1-TR | Indoor Unit | 4-way Cassette | 0.00           |
| MMU-AP0364HP1-E  | Indoor Unit | 4-way Cassette | 0.00           |
| MMU-AP0364HP1-TR | Indoor Unit | 4-way Cassette | 0.00           |
| MMU-AP0484HP1-E  | Indoor Unit | 4-way Cassette | 0.00           |
| MMU-AP0484HP1-TR | Indoor Unit | 4-way Cassette | 0.00           |
| MMU-AP0564HP1-E  | Indoor Unit | 4-way Cassette | 0.00           |
| MMU-AP0564HP1-TR | Indoor Unit | 4-way Cassette | 0.00           |
| MMU-AP0094HP-E   | Indoor Unit | 4-way Cassette | 0.00           |

Import Export Client pri

Export the price list as an Excel file in order to edit the list

OK Close

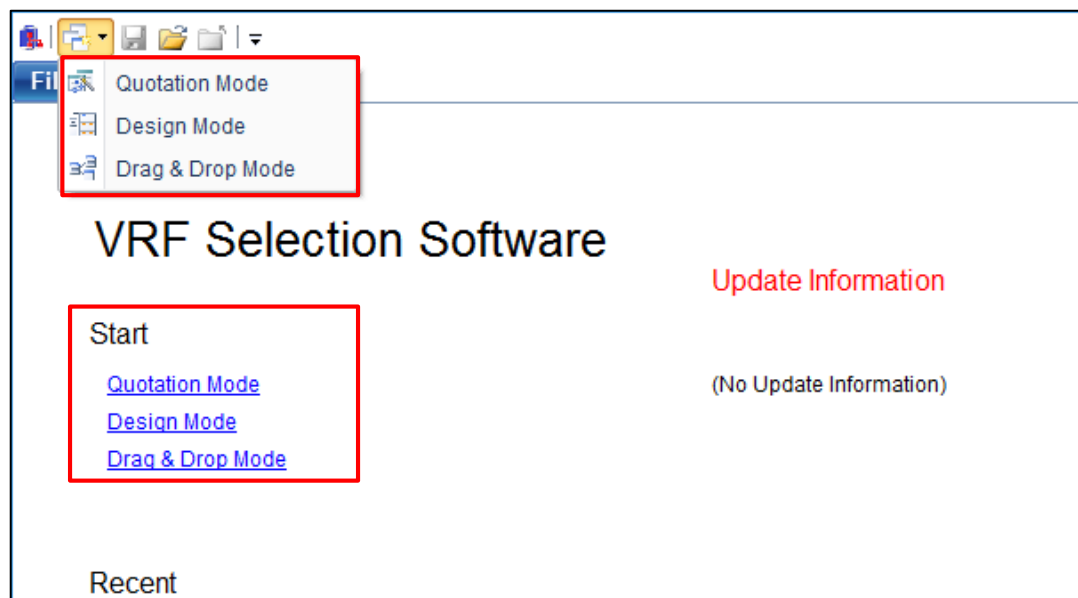
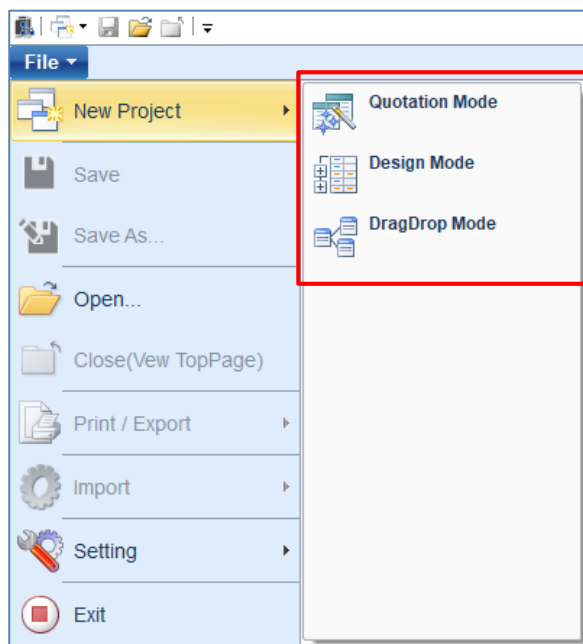
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3. **New Project**
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### 3. New Project



3 different ways to start a project:

- Quotation mode: quick design with automatic piping for quick quotations
- Design mode: A more advanced quotation mode
- Drag & Drop mode: Will create a blank canvas with most options

### 3. New Project

## New Project:

Before creating a project, the New Project window will be displayed

**General** | Client | Advanced | Floors | Rooms | Design Condition | Comment

**Project Details**

Title: New Project3

Region: Europe | Europe | Frequency: 50Hz

Reference No:

Reference Text:

Prepared By:

Revision:

Project Save Location: C:\Users\sarasolaa\Documents

**System Details**

Name: System 1

Product: VRF

Type: Super Modular Multi System (SMMS-e)

Standard  All Fresh Air Intake  Dx kit(0-10V)

Refrigerant saving  Cooling Only

Maximum Building Diversity 0 %  Indoor Unit auto-sizing

Equivalent Length Ratio: 1.2  Load Sharing

PMV Series: 3

Single Drawing for all floors  Separate Drawing for individual floors

OK Cancel

### 3. New Project

## Drag and Drop mode:

Select the System type and fill the required information (just the Project Title is mandatory). Beware, the region can't be changed later:

The screenshot shows the 'New Project' dialog box with the following details:

- Project Details:**
  - Title: New Project3
  - Region: Europe (dropdown menu)
  - Frequency: 50Hz (radio button selected)
  - Reference No: [Empty field]
  - Reference Text: [Empty field]
  - Prepared By: [Empty field]
  - Revision: [Empty field]
  - Project Save Location: C:\Users\sarasolaal\Documents
- System Details:**
  - Name: System 1
  - Product: VRF (dropdown menu)
  - Type: Super Modular Multi System (SMMS-e) (dropdown menu)
  - Standard:  (selected)
  - All Fresh Air Intake:
  - Dx kit(0-10V):
  - Refrigerant saving:  (checked)
  - Cooling Only:
  - Maximum Building Diversity:  0 %
  - Indoor Unit auto-sizing:
  - Equivalent Length Ratio: 1.2
  - Load Sharing:
  - PMV Series: 3 (dropdown menu)
  - Single Drawing for all floors:  (selected)
  - Separate Drawing for individual floors:

### 3. New Project

## Drag and Drop mode:

Client company data and project address can be set for the output:

The screenshot shows a software interface with a tabbed menu at the top. The 'Client' tab is selected and highlighted with a blue dashed border. The menu includes 'General', 'Client', 'Advanced', 'Floors', 'Rooms', 'Design Condition', and 'Comment'. Below the menu, the form is divided into two main sections. The left section is for 'Client' information and includes a 'Client Name' field with a 'Select...' button, a 'Client Address' section with five stacked text input fields, a 'Contact' field, a 'Main Tel No' field, and an 'E-mail' field. The right section is for 'Site' information and includes a 'Site Address' section with five stacked text input fields, a 'Site Contact' field, a 'Site Contact Tel No' field, and a 'Site E-mail' field.

### 3. New Project

## Drag and Drop mode:

Fan Speed correction factors and the altitude correction factors can be set:

New Project

General Client **Advanced** Floors Rooms Design Condition Comment

Fan speed correction coefficients

|         | Cooling | Sensible | Heating |
|---------|---------|----------|---------|
| High    | 1.000   | 1.000    | 1.000   |
| Medium+ | 0.950   | 0.925    | 0.950   |
| Medium  | 0.900   | 0.850    | 0.900   |
| Low+    | 0.850   | 0.800    | 0.850   |
| Low     | 0.800   | 0.740    | 0.800   |

Reset to defaults

Update Project

Altitude Condition

|         | Cooling | Heating |
|---------|---------|---------|
| Outdoor | 1.000   | 1.000   |
| Indoor  | 1.000   | 1.000   |

Fan Speeds

Set Fan Speed of all Indoor Units to:

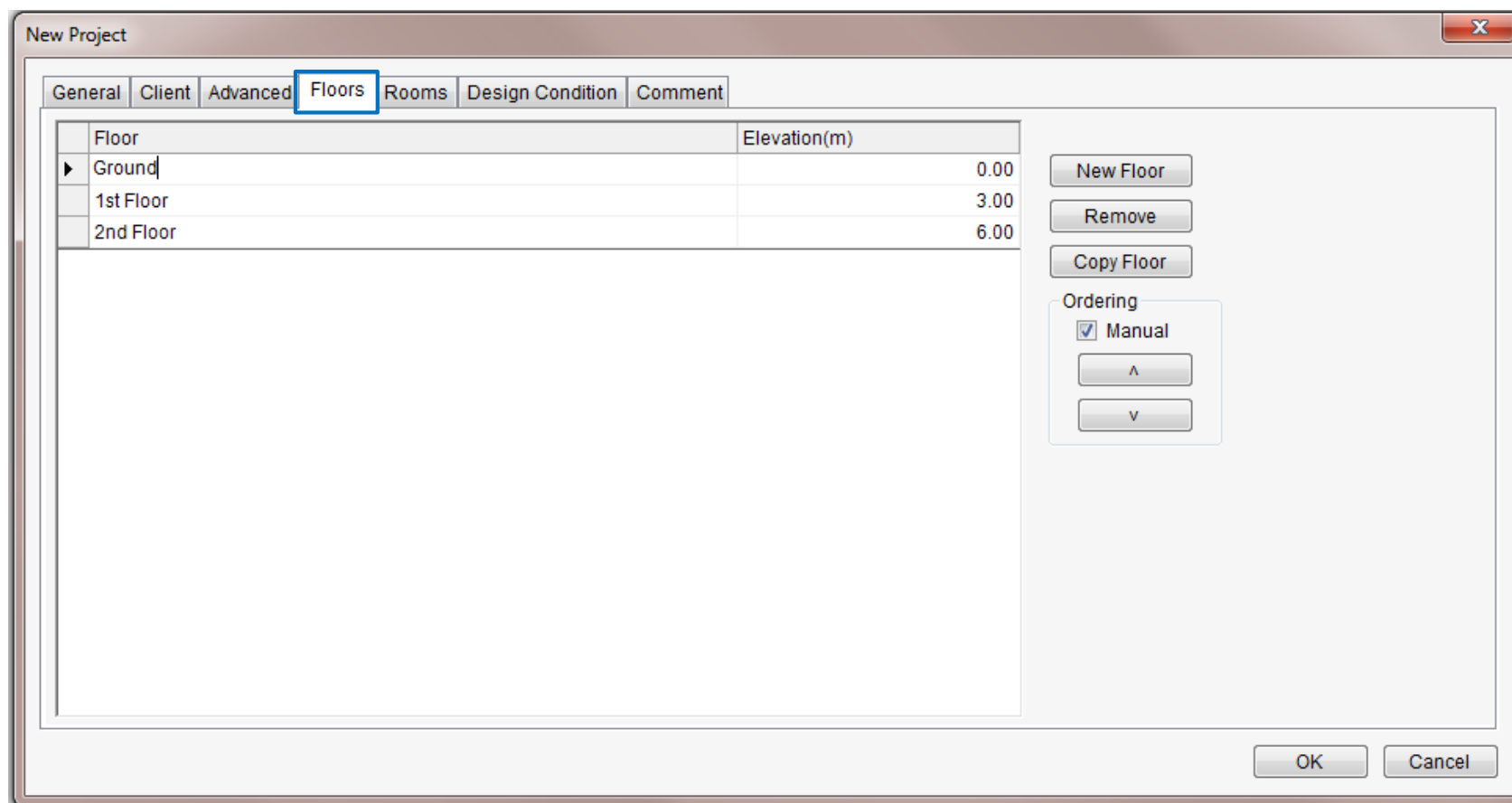
High Medium+ Medium Low+ Low

OK Cancel

### 3. New Project

## Drag and Drop mode:

Floors for the system can be set. It will set the height automatically to the units on the floor



### 3. New Project

## Drag and Drop mode:

Configure the virtual rooms and the room specifications:

The screenshot shows the 'New Project' window with the 'Rooms' tab selected. The table below lists the configured rooms:

| Room         | Floor     | Cooling |        |       | Heating | Room Dimensions |            | Room Load(kW) |          |         |                          |
|--------------|-----------|---------|--------|-------|---------|-----------------|------------|---------------|----------|---------|--------------------------|
|              |           | DB(°C)  | WB(°C) | RH(%) | DB(°C)  | Area(m2)        | Volume(m3) | Cooling       | Sensible | Heating | ROT                      |
| Garaje       | Ground    | 27.0    | 19.0   | 47    | 20.0    | 40.00           | 250.00     | 4.80          | 3.60     | 4.40    | <input type="checkbox"/> |
| Toilet       | 1st Floor | 27.0    | 19.0   | 47    | 20.0    | 20.00           | 50.00      | 2.40          | 1.80     | 2.20    | <input type="checkbox"/> |
| Kitchen      | 1st Floor | 27.0    | 19.0   | 47    | 20.0    | 40.00           | 120.00     | 4.80          | 3.60     | 4.40    | <input type="checkbox"/> |
| Sitting room | 1st Floor | 27.0    | 19.0   | 47    | 20.0    | 70.00           | 150.00     | 8.40          | 6.30     | 7.70    | <input type="checkbox"/> |
| Bedroom      | 2nd Floor | 27.0    | 19.0   | 47    | 20.0    | 20.00           | 95.00      | 2.40          | 1.80     | 2.20    | <input type="checkbox"/> |
| Bedroom 2    | 2nd Floor | 27.0    | 19.0   | 47    | 20.0    | 75.00           | 200.00     | 9.00          | 6.75     | 8.25    | <input type="checkbox"/> |

Below the table, indoor conditions are specified: Indoor DB(Cooling): 18°C - 32°C, Indoor DB(Heating): 15°C - 28°C, Indoor WB(Cooling): 15°C - 24°C, Indoor RH(Cooling): 20% - 80%. A 'Duplicate selected Rooms' button is also present.

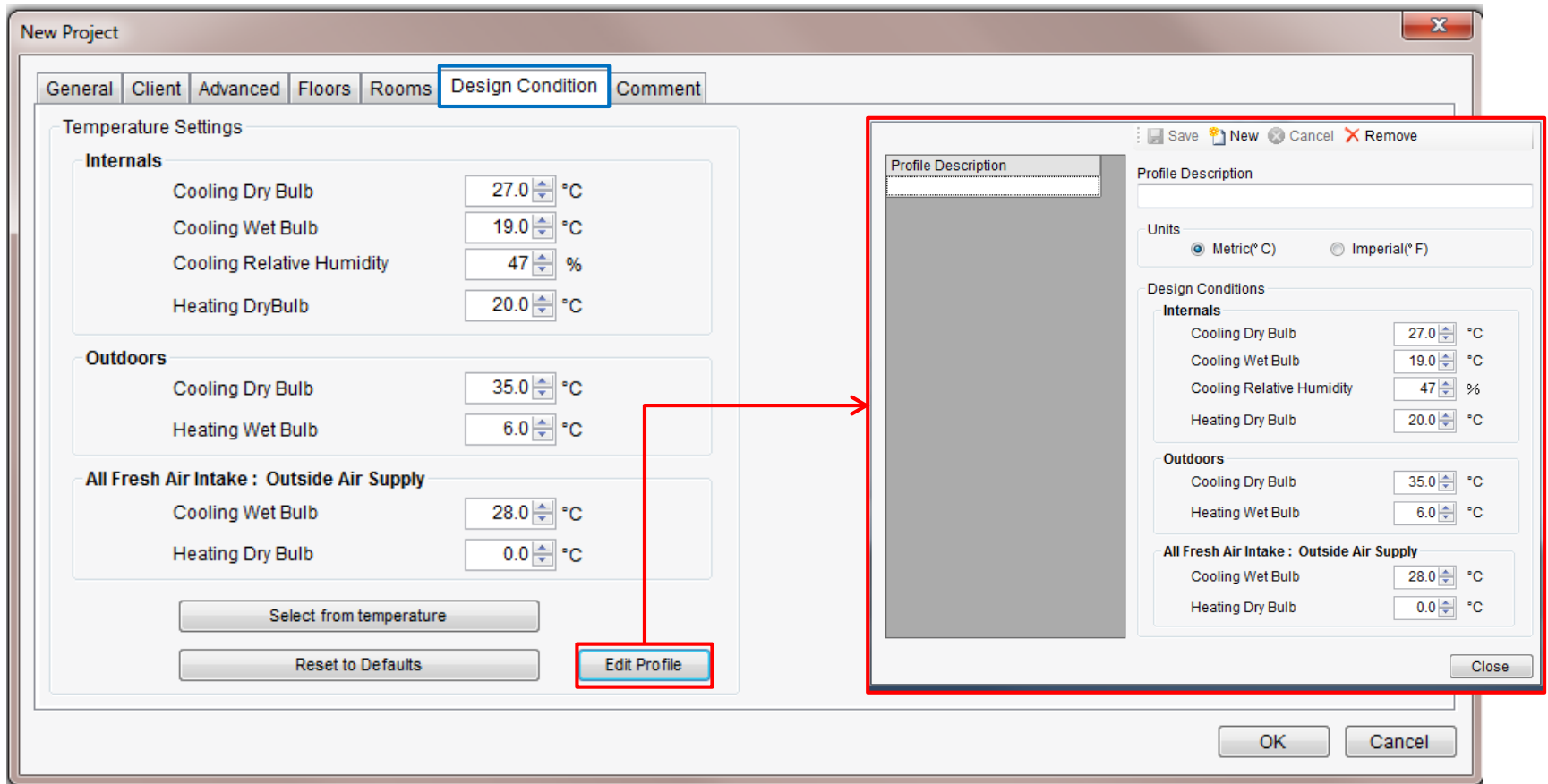
A callout box states: **Volume used to calculate the leak values  
Area \* ROT = required capacities**

The detailed view for 'Bedroom 2' shows the following R.O.T. values (in kW/m2):  
Room R.O.T. Cooling: 0.12  
Room R.O.T. Sensible: 0.09  
Room R.O.T. Heating: 0.11

### 3. New Project

## Drag and Drop mode:

Set the default temperatures for the project:

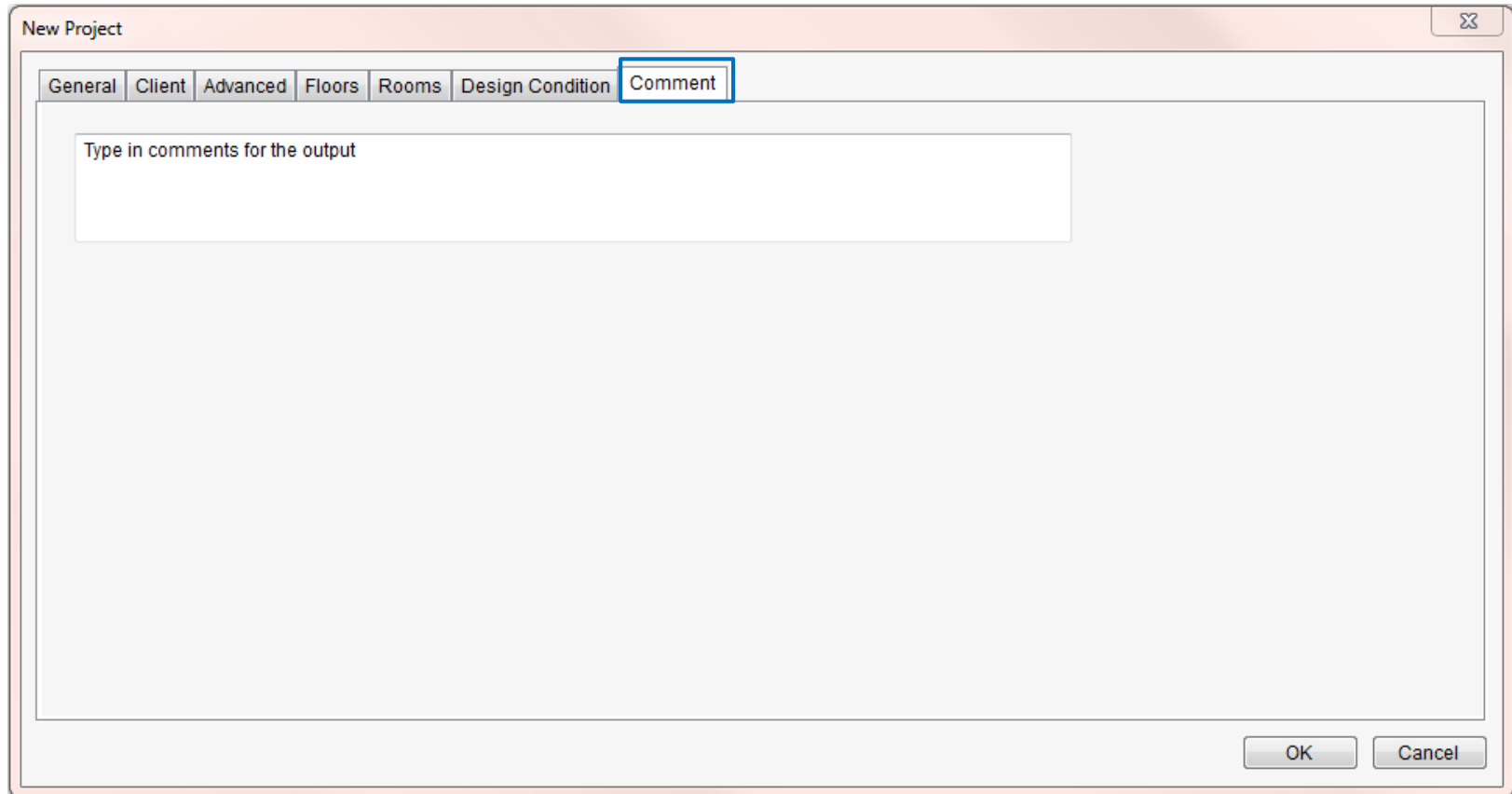




### 3. New Project

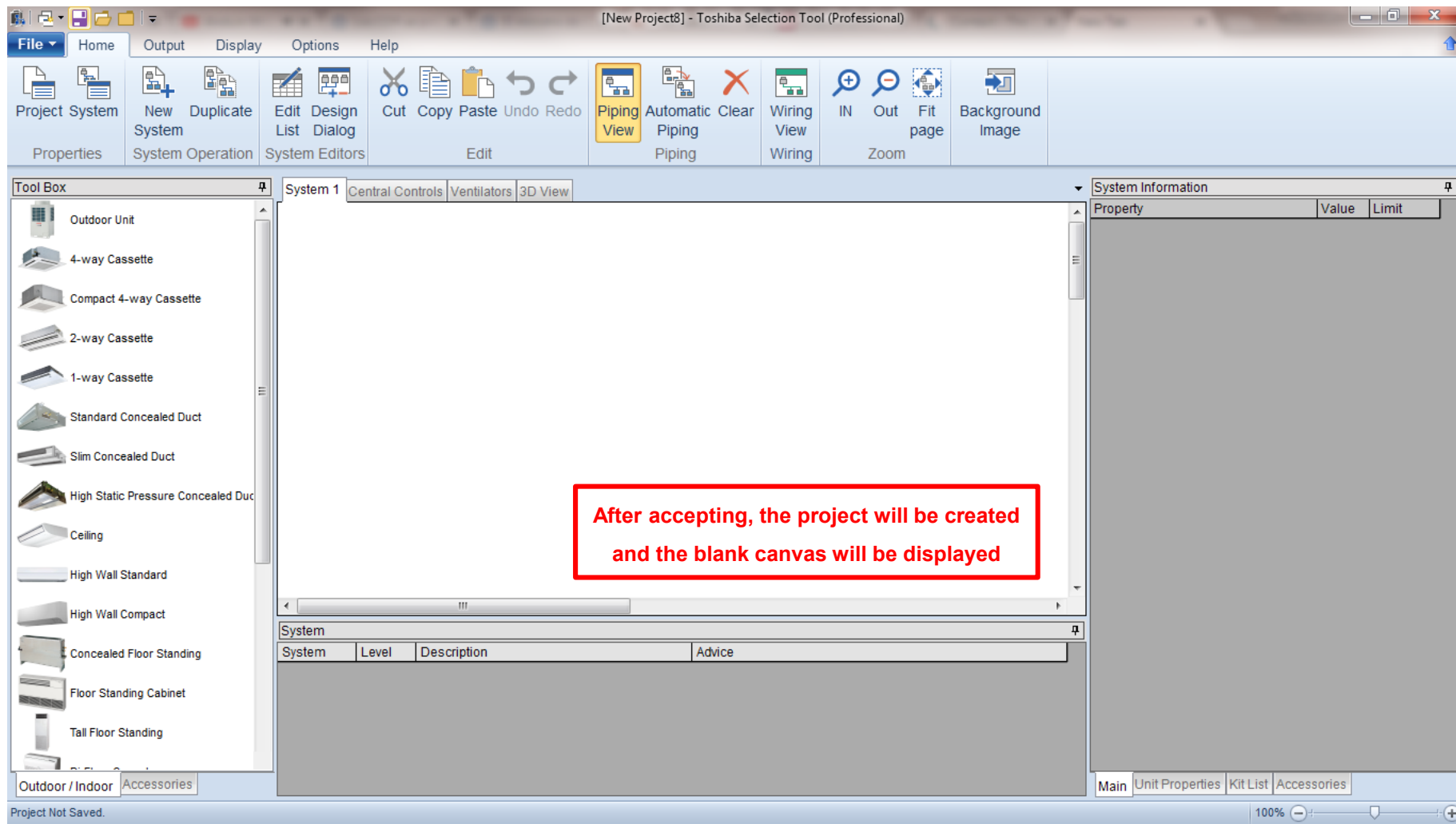
## Drag and Drop mode:

Type in comments to be displayed on the output



The image shows a software dialog box titled "New Project". It has a tabbed interface with the following tabs: "General", "Client", "Advanced", "Floors", "Rooms", "Design Condition", and "Comment". The "Comment" tab is currently selected and highlighted with a blue border. Inside the dialog, there is a large text input area with the placeholder text "Type in comments for the output". At the bottom right of the dialog, there are two buttons: "OK" and "Cancel".

# 3. New Project



### 3. New Project

## Quotation mode: Set the basic settings

New Project

General Comment

Project Details

Title  
New Project9

Region  
Europe Europe

Frequency  
50Hz

Outdoor unit Setting

Name  
System 1

Product  
VRF

Type  
Super Modular Multi System (SMMS-e)

Standard  All Fresh Air Intake  Dx kit(0-10V)

Refrigerant saving  
 Cooling Only

Project Save Location  
C:\Users\sarasolaal\Documents

Single Drawing for all floors  Separate Drawing for individual floors

OK Cancel

The quotation mode has limited tab and options when creating a new project.

### 3. New Project

# Quotation mode: Chose the units for the quotation:

**Set multiple systems**

**Outdoor unit will be chosen automatically**

| Capacity Rank          | 005                    | 007 | 009 | 012 | 015  | 018 | 024 | 027 | 030 | 036  | 048  | 056  | 072  | 096 |      |
|------------------------|------------------------|-----|-----|-----|------|-----|-----|-----|-----|------|------|------|------|-----|------|
| Capacity Code          | PMV                    | 0.6 | 0.8 | 1.0 | 1.25 | 1.7 | 2.0 | 2.5 | 3.0 | 3.2  | 4.0  | 5.0  | 6.0  | 8.0 | 10.0 |
| Cooling Rated Capacity | 4-way Cassette         |     |     | 2.8 | 3.6  | 4.5 | 5.6 | 7.1 | 8.0 | 9.0  | 11.2 | 14.0 | 16.0 |     |      |
| Sensible Capacity      | 4-way Cassette         |     |     | 2.1 | 2.6  | 3.2 | 4.0 | 4.9 | 5.5 | 6.2  | 7.7  | 9.8  | 11.0 |     |      |
| Heating Rated Capacity | 4-way Cassette         |     |     | 3.2 | 4.0  | 5.0 | 6.3 | 8.0 | 9.0 | 10.0 | 12.5 | 16.0 | 18.0 |     |      |
| Quantity               | 4-way Cassette         |     |     | 0   | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |     |      |
| Cooling Rated Capacity | Compact 4-way Cassette |     | 1.7 | 2.2 | 2.8  | 3.6 | 4.5 | 5.6 |     |      |      |      |      |     |      |
| Sensible Capacity      | Compact 4-way Cassette |     | 1.5 | 1.8 | 2.2  | 2.7 | 3.3 | 4.0 |     |      |      |      |      |     |      |
| Heating Rated Capacity | Compact 4-way Cassette |     | 1.9 | 2.5 | 3.2  | 4.0 | 5.0 | 6.3 |     |      |      |      |      |     |      |
| Quantity               | Compact 4-way Cassette |     | 0   | 0   | 0    | 0   | 0   | 0   |     |      |      |      |      |     |      |
| Cooling Rated Capacity | 2-way Cassette         |     | 2.2 | 2.8 | 3.6  | 4.5 | 5.6 | 7.1 | 8.0 | 9.0  | 11.2 | 14.0 | 16.0 |     |      |
| Sensible Capacity      | 2-way Cassette         |     | 1.8 | 2.2 | 2.7  | 3.2 | 4.1 | 5.1 | 5.6 | 6.2  | 8.4  | 9.7  | 10.9 |     |      |
| Heating Rated Capacity | 2-way Cassette         |     | 2.5 | 3.2 | 4.0  | 5.0 | 6.3 | 8.0 | 9.0 | 10.0 | 12.5 | 16.0 | 18.0 |     |      |
| Quantity               | 2-way Cassette         |     | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |     |      |
| Cooling Rated Capacity | 1-way Cassette         |     | 2.2 | 2.8 | 3.6  | 4.5 | 5.6 | 7.1 |     |      |      |      |      |     |      |
| Sensible Capacity      | 1-way Cassette         |     | 1.8 | 2.3 | 2.8  | 3.4 | 4.0 | 5.0 |     |      |      |      |      |     |      |
| Heating Rated Capacity | 1-way Cassette         |     | 2.5 | 3.2 | 4.0  | 5.0 | 6.3 | 8.0 |     |      |      |      |      |     |      |
| Quantity               | 1-way Cassette         |     | 0   | 0   | 0    | 0   | 0   | 0   |     |      |      |      |      |     |      |
| Cooling Rated Capacity | Standard               |     | 2.2 | 2.8 | 3.6  | 4.5 | 5.6 | 7.1 | 8.0 | 9.0  | 11.2 | 14.0 | 16.0 |     |      |

**Indoor Units Total Capacity**

|            |     |    |
|------------|-----|----|
| Capa. Code | 0.0 | HP |
| Cooling    | 0.0 | kW |
| Sensible   | 0.0 | kW |
| Heating    | 0.0 | kW |

**Outdoor Unit Model / Capacity**

|         |      |
|---------|------|
| Model   | -    |
| Cooling | - kW |
| Heating | - kW |

**Outdoor Unit Select with**

Standard  High Efficiency

**Pipe Length**

Automatic  Manual

Farthest pipe(m)  Main pipe(m)  Branching piping(m)  Indoor Unit Connecting piping(m)

Unit per Row

Back Next Close

**Set the pipe lengths automatically by setting the farthest pipe or set manually the pipes length of the system**

# 3. New Project

## Quotation mode: The design will be created:

The screenshot displays the Toshiba Selection Tool (Professional) interface for a new project. The main workspace shows a piping diagram for 'System 1' with three horizontal branches. Each branch contains five outdoor units connected to a central control unit. The units are labeled with model numbers like 'M8U-UP01275kW-E' and 'X160-8701540 kW'. The interface includes a 'Tool Box' on the left with various unit and duct options, a 'System Information' table on the right, and a 'System' table at the bottom. A 'Toshiba Selection Tool' dialog box is open, showing 'Automatic piping drawing' options: 'Normal (unicursal)' (selected) and 'Vertical (with Branches)'. The 'System Information' table is as follows:

| Property                          | Value   | Limit |
|-----------------------------------|---------|-------|
| Total System Check                |         | X     |
| Outdoor Units                     | 0 Unit  | -     |
| Indoor Units (Control P.C.Boards) | 0 Unit  | -     |
| Outdoor Combined Rated HP         | 0 HP    | -     |
| Outdoor Combined Rated Cooling    | 0.00... | -     |
| Outdoor Combined Rated Heating    | 0.00... | -     |
| Indoor Combined Rated Cooling     | 0.00... | -     |

The 'System' table at the bottom shows alerts:

| System   | Level | Description                            | Advice  |
|----------|-------|--|---|
| System 1 | Alert | Pipe length is zero (x29)              | Please enter a length.                            |
| System 1 | Alert | Outdoor Units Pipe length is zero (x4) | Please enter a length in Setting of Outdoor Unit. |

### 3. New Project

# Quotation mode: The design will be created:

The screenshot displays the Toshiba Selection Tool (Professional) interface for a new project. The main workspace shows a piping diagram for 'System 1' with various indoor units connected to a central outdoor unit. A 'System Information' table is visible on the right, and a 'Toshiba Selection Tool' dialog box is open, allowing the user to choose between 'Normal (uncursal)' and 'Vertical (with Branches)' for automatic piping drawing. A system alert table at the bottom indicates a warning for zero pipe length.

| Property                          | Value   | Limit    |
|-----------------------------------|---------|----------|
| <b>Total System Check</b>         |         | <b>X</b> |
| Outdoor Units                     | 1 Unit  | -        |
| Indoor Units (Control P.C.Boards) | 15 Unit | 36 Unit  |
| Outdoor Combined Rated HP         | 16 HP   | -        |
| Outdoor Combined Rated Cooling    | 45.0... | -        |
| Outdoor Combined Rated Heating    | 50.0... | -        |

| System   | Level | Description               | Advice                 |
|----------|-------|---------------------------|------------------------|
| System 1 | Alert | Pipe length is zero (x29) | Please enter a length. |

| Property                              | Value  | Limit    |
|---------------------------------------|--------|----------|
| Farthest Piping Between Outdoor...    | 0.00 m | 25.00 m  |
| Main Piping Real Length(L1)           | 0.00 m | 100.00 m |
| Main Piping Equivalent Length(L1e)    | 0.00 m | 120.00 m |
| Greatest Indoor Unit Connecting Pi... | 0.00 m | 30.00 m  |
| Greatest Outdoor Unit Connecting...   | 0.00 m | 10.00 m  |
| Greatest Piping Between Branches...   | 0.00 m | 50.00 m  |
| Highest Outdoor Unit                  | 0.00 m | -        |
| Lowest Outdoor Unit                   | 0.00 m | -        |
| Highest Indoor Unit                   | 0.00 m | 40.00 m  |
| Lowest Indoor Unit                    | 0.00 m | 70.00 m  |

## 3. New Project

### Design mode:

Set the basic settings:

**New Project**

General | Client | Advanced | Design Condition | Comment

**Project Details**

Title: New Project 4

Region: Europe (dropdown) | Frequency: 50Hz (radio button)

Reference No: [text field]

Reference Text: [text field]

Prepared By: [text field]

Revision: [text field]

Project Save Location: C:\Users\sarasolaal\Documents [Browser...]

**System Details**

Name: System 1

Product: VRF (dropdown)

Maximum Building Diversity: 0 % [checkbox Indoor Unit auto-sizing]

Equivalent Length Ratio: 1.2 [checkbox Load Sharing]

PMV Series: 3 (dropdown)

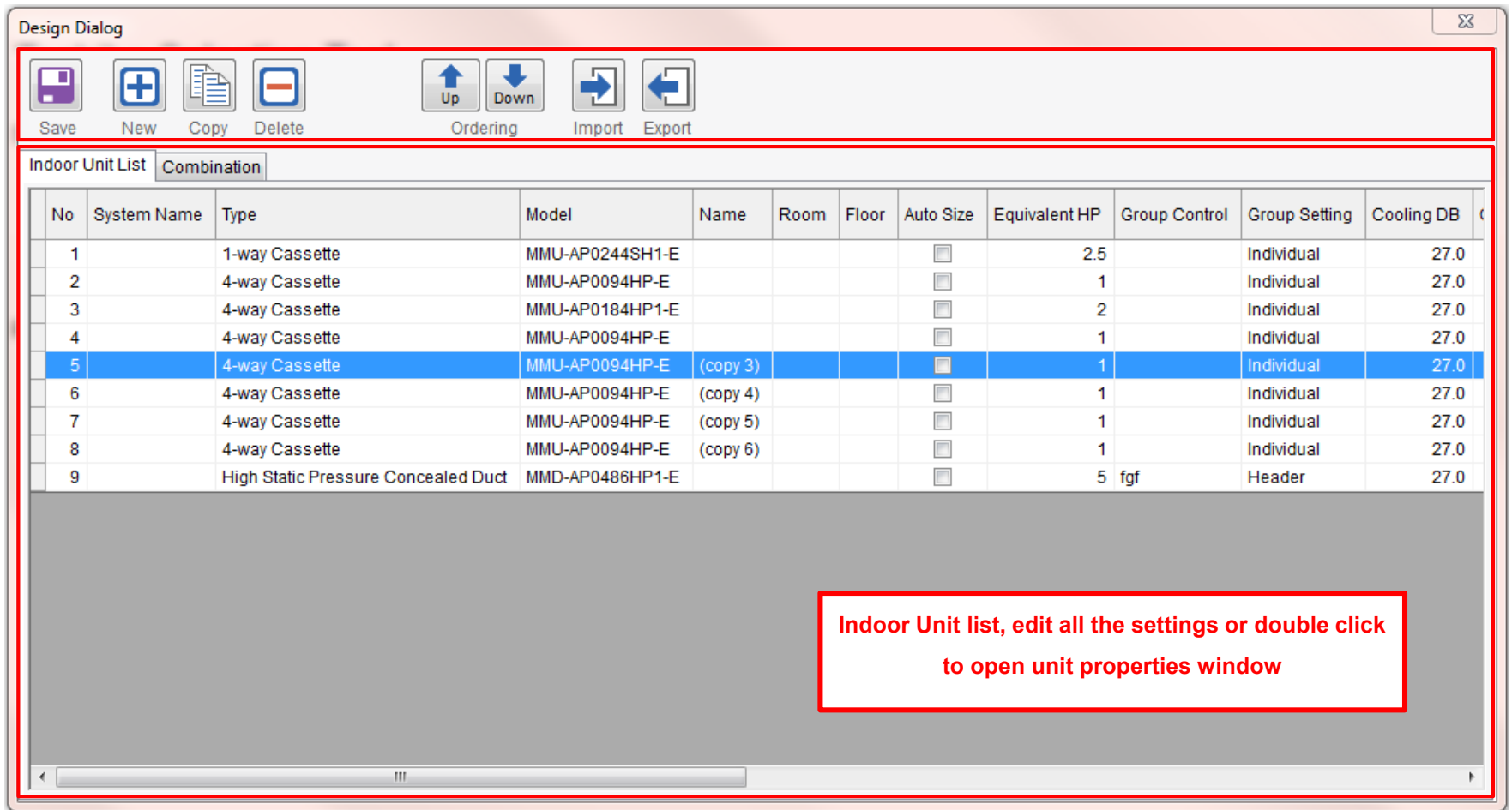
**The design mode has limited tab and options when creating a new project.**

OK Cancel

### 3. New Project

## Design mode:

A more advanced quotation mode:



The screenshot shows the 'Design Dialog' window with a toolbar at the top containing icons for Save, New, Copy, Delete, Ordering (Up/Down), Import, and Export. Below the toolbar is the 'Indoor Unit List' table, which is currently in 'Combination' mode. The table lists 9 units with columns for No, System Name, Type, Model, Name, Room, Floor, Auto Size, Equivalent HP, Group Control, Group Setting, and Cooling DB. Row 5 is highlighted in blue. A red-bordered box at the bottom right of the window contains the text: 'Indoor Unit list, edit all the settings or double click to open unit properties window'.

| No | System Name | Type                                | Model           | Name     | Room | Floor | Auto Size                | Equivalent HP | Group Control | Group Setting | Cooling DB |
|----|-------------|-------------------------------------|-----------------|----------|------|-------|--------------------------|---------------|---------------|---------------|------------|
| 1  |             | 1-way Cassette                      | MMU-AP0244SH1-E |          |      |       | <input type="checkbox"/> | 2.5           |               | Individual    | 27.0       |
| 2  |             | 4-way Cassette                      | MMU-AP0094HP-E  |          |      |       | <input type="checkbox"/> | 1             |               | Individual    | 27.0       |
| 3  |             | 4-way Cassette                      | MMU-AP0184HP1-E |          |      |       | <input type="checkbox"/> | 2             |               | Individual    | 27.0       |
| 4  |             | 4-way Cassette                      | MMU-AP0094HP-E  |          |      |       | <input type="checkbox"/> | 1             |               | Individual    | 27.0       |
| 5  |             | 4-way Cassette                      | MMU-AP0094HP-E  | (copy 3) |      |       | <input type="checkbox"/> | 1             |               | Individual    | 27.0       |
| 6  |             | 4-way Cassette                      | MMU-AP0094HP-E  | (copy 4) |      |       | <input type="checkbox"/> | 1             |               | Individual    | 27.0       |
| 7  |             | 4-way Cassette                      | MMU-AP0094HP-E  | (copy 5) |      |       | <input type="checkbox"/> | 1             |               | Individual    | 27.0       |
| 8  |             | 4-way Cassette                      | MMU-AP0094HP-E  | (copy 6) |      |       | <input type="checkbox"/> | 1             |               | Individual    | 27.0       |
| 9  |             | High Static Pressure Concealed Duct | MMD-AP0486HP1-E |          |      |       | <input type="checkbox"/> | 5 fgf         |               | Header        | 27.0       |



### 3. New Project

## Design mode:

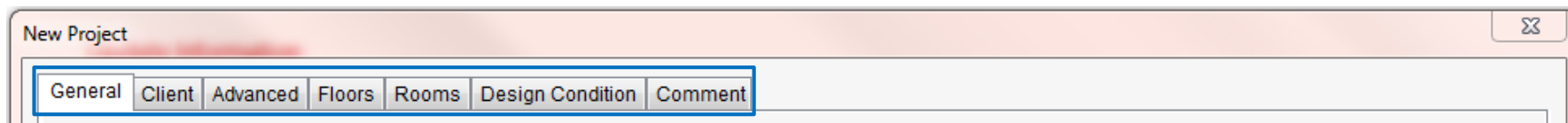
A more advanced quotation mode:

The screenshot shows the 'Design Dialog' window with the following components:

- Toolbar:** Save, New, Copy, Delete, Up, Down, Import, Export, and Design condition.
- Indoor Unit List / Combination:** Two tabs are visible.
- Outdoor Unit Data:**
  - Refrigerant Cycle: Number 1, Name
  - Unit Type: Super Modular Multi System (SMMS-e)
  - Model: MMY-MAP1806HT8P-E
  - Cooling Capacity: 50.40 kW
  - Heating Capacity: 56.00 kW
  - Connected Indoor unit Count: 3
  - Total Cooling: 15.50 kW
  - Total Heating: 17.50 kW
  - Capacity Ratio: 30.56 %
- Project Tree:** New Project11
  - System 1 - MMY-MAP1806HT8P-E
    - MMU-AP0244SH1-E
    - MMU-AP0094HP-E
    - MMU-AP0184HP1-E
  - System 2 - MMY-MAP0806FT8P-E
    - MMD-AP0486HP1-E
- Selectable Indoor Unit:** A table with columns No, Model, and Name.

| No | Model          | Name     |
|----|----------------|----------|
| 4  | MMU-AP0094HP-E |          |
| 5  | MMU-AP0094HP-E | (copy 3) |
| 6  | MMU-AP0094HP-E | (copy 4) |
| 7  | MMU-AP0094HP-E | (copy 5) |
| 8  | MMU-AP0094HP-E | (copy 6) |
- Unit per Row:** 8
- Piping schematic:** A button at the bottom right.

### 3. New Project



| Mode / Tab          | Mode           |             |                  | Tab              |                 |
|---------------------|----------------|-------------|------------------|------------------|-----------------|
|                     | Quotation Mode | Design Mode | Drag & Drop Mode | Project Property | System Property |
| General             | Displayed      | Displayed   | Displayed        | Displayed        | Displayed       |
| Client              | -              | Displayed   | Displayed        | Displayed        | -               |
| Advanced            | -              | Displayed   | Displayed        | Displayed        | -               |
| Floors              | -              | -           | Displayed        | -                | Displayed       |
| Rooms               | -              | -           | Displayed        | -                | Displayed       |
| Design Condition    | -              | Displayed   | Displayed        | -                | Displayed       |
| Unit of Measurement |                |             |                  | Displayed        |                 |
| Comment             | Displayed      | Displayed   | Displayed        | Displayed        | Displayed       |

# 3. New Project

## Project created:

Once the project has been created, the user can open the design dialog window again by clicking here. Can also be opened with projects created using drag and drop or quotation mode

Edit the system and project properties from here:

- **Project properties:**
  - General Project properties
  - Client data
  - Fan speed and altitude correction factors
  - Units
  - Project notes
- **System properties:**
  - System properties
  - System Floors
  - System Rooms
  - Design conditions
  - System notes

| Information                           | Value   | Limit     |
|---------------------------------------|---------|-----------|
| Arm Check                             |         | X         |
| Units                                 | 0 Unit  | -         |
| Units (Control P.C.Boards)            | 0 Unit  | -         |
| Combined Rated HP                     | 0 HP    | -         |
| Outdoor Combined Rated Cooling        | 0.00... | -         |
| Outdoor Combined Rated Heating        | 0.00... | -         |
| Indoor Combined Rated Cooling         | 0.00... | -         |
| Indoor Combined Corrected Cooling     | 0.00... | -         |
| Indoor Combined Rated Heating         | 0.00... | -         |
| Indoor Combined Corrected Heating     | 0.00... | -         |
| Indoor Units Combined Capacity C...   | 0.0     | -         |
| Outdoor Combined Capacity Code        | 0       | -         |
| Capacity Ratio                        | 0.0 %   | 50 - 135% |
| Total Pipe Length                     | 0.00 m  | -         |
| Farthest Piping Real Length           | 0.00 m  | -         |
| Farthest Piping Equivalent Length     | 0.00 m  | -         |
| Farthest Piping From 1st Indoor Br... | 0.00 m  | -         |
| Farthest Piping From 1st Indoor Br... | 0.00 m  | -         |
| Farthest Piping Between Outdoor...    | 0.00 m  | -         |
| Main Piping Real Length(L1)           | 0.00 m  | -         |
| Main Piping Equivalent Length(L1e)    | 0.00 m  | -         |
| Greatest Indoor Unit Connecting Pi... | 0.00 m  | -         |
| Greatest Outdoor Unit Connecting...   | 0.00 m  | -         |
| Greatest Piping Between Branches...   | 0.00 m  | -         |
| Highest Outdoor Unit                  | 0.00 m  | -         |
| Lowest Outdoor Unit                   | 0.00 m  | -         |
| Highest Indoor Unit                   | 0.00 m  | -         |
| Lowest Indoor Unit                    | 0.00 m  | -         |

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2. Set up
3. New Project
4. Design Window
5. System Design
6. Central Controllers
7. Output

## 4. Design Window

### Design window:

After creating a project, the design window appears. The design window has the following areas:

- Main functions
- Toolbox
- Canvas
- Error list
- System info

The screenshot displays the Toshiba Selection Tool software interface. The main window is titled "[New Project12] = Toshiba Selection Tool (Professional)". The interface is divided into several key areas:

- Menu Bar:** File, Home, Output, Display, Options, Help.
- Toolbar:** Project System, New System, Duplicate System, Edit Design List Dialog, System Editors, Piping View, Automatic Piping, Clear Piping, Wiring View, IN, Out, Fit page, Background Image.
- Tool Box (Left):** A list of equipment and components including Outdoor Unit, 4-way Cassette, Compact 4-way Cassette, 2-way Cassette, 1-way Cassette, Standard Concealed Duct, Slim Concealed Duct, High Static Pressure Concealed Duct, Ceiling, High Wall Standard, High Wall Compact, Concealed Floor Standing, Floor Standing Cabinet, Tall Floor Standing, Bi-Flow Console, Air to Air Heat Exchanger with DX-C, Air to Air Heat Exchanger with DX-C Humidifier, Fresh Air Intake Indoor Unit, DX Coil Interface (TA), and Mid temperature Hot Water Module.
- Canvas (Center):** A 3D piping diagram for "System 1" showing a central control unit connected to multiple indoor units via piping. The diagram includes labels for pipe lengths and unit specifications.
- System Information (Right):** A table listing various system properties and their values/limits.
- Error List (Bottom):** A table showing system alerts.

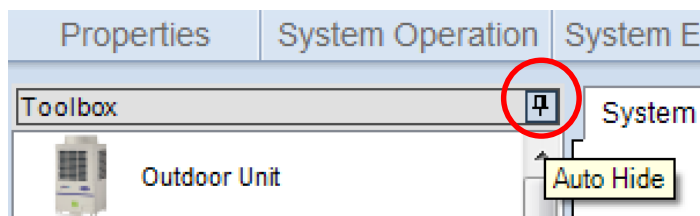
| Property                                 | Value    | Limit     |
|--|----------|-----------|
| <b>Total System Check</b>                |          | X         |
| Outdoor Units                            | 0 Unit   | -         |
| Indoor Units (Control P.C Boards)        | 0 Unit   | -         |
| Outdoor Combined Rated HP                | 0 HP     | -         |
| Outdoor Combined Rated Cooling           | 0.00...  | -         |
| Outdoor Combined Rated Heating           | 0.00...  | -         |
| Indoor Combined Rated Cooling            | 0.00...  | -         |
| Indoor Combined Rated Heating            | 0.00...  | -         |
| Indoor Combined Corrected Cooling        | 0.00...  | -         |
| Indoor Combined Corrected Heating        | 0.00...  | -         |
| Indoor Units Combined Capacity Code      | 0.0      | -         |
| Outdoor Combined Capacity Code           | 0        | -         |
| Capacity Ratio                           | 0.0 %    | 50 - 135% |
| Total Pipe Length                        | 0.00 m   | -         |
| Farthest Piping Real Length              | 0.00 m   | -         |
| Farthest Piping Equivalent Length        | 0.00 m   | -         |
| Farthest Piping From 1st Indoor Bran...  | 0.00 m   | -         |
| Farthest Piping From 1st Indoor Bran...  | 0.00 m   | -         |
| Farthest Piping Between Outdoor Uni...   | 0.00 m   | -         |
| Main Piping Real Length(L1)              | 0.00 m   | -         |
| Main Piping Equivalent Length(L1e)       | 0.00 m   | -         |
| Greatest Outdoor Unit Connecting Pipi... | 0.00 m   | -         |
| Greatest Outdoor Unit Connecting Pi...   | 0.00 m   | -         |
| Greatest Piping Between Branches E...    | 0.00 m   | -         |
| Highest Outdoor Unit                     | 0.00 m   | -         |
| Lowest Outdoor Unit                      | 0.00 m   | -         |
| Highest Indoor Unit                      | 0.00 m   | -         |
| Lowest Indoor Unit                       | 0.00 m   | -         |
| Greatest Height Between Indoor And...    | 0.00 m   | -         |
| Greatest Height Difference Between I...  | 0.00 m   | -         |
| Greatest Height Difference Between...    | 0.00 m   | -         |
| Limit Density                            | 0.000... | -         |
| Additional Charge                        | 0.000... | -         |
| Total Charge                             | 0.000... | -         |

| system   | Level | Description                            | Advice  |
|----------|-------|--|---|
| System 1 | Alert | Pipe length is zero (x29)              | Please enter a length.                            |
| System 1 | Alert | Outdoor Units Pipe length is zero (x4) | Please enter a length in Setting of Outdoor Unit. |

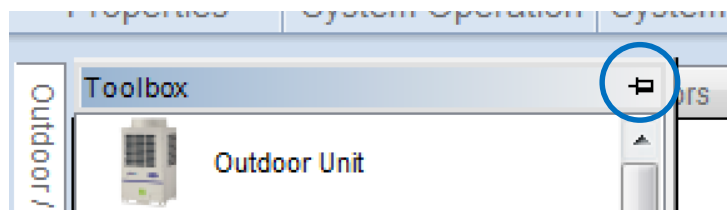
## 4. Design Window

### Design window:

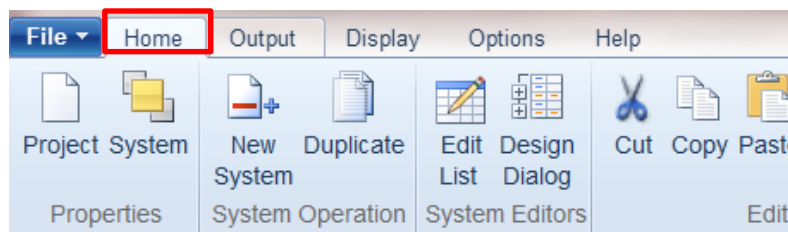
The different windows can be customized to increase the canvas area:



Auto-Hide pin



Re-dock pin

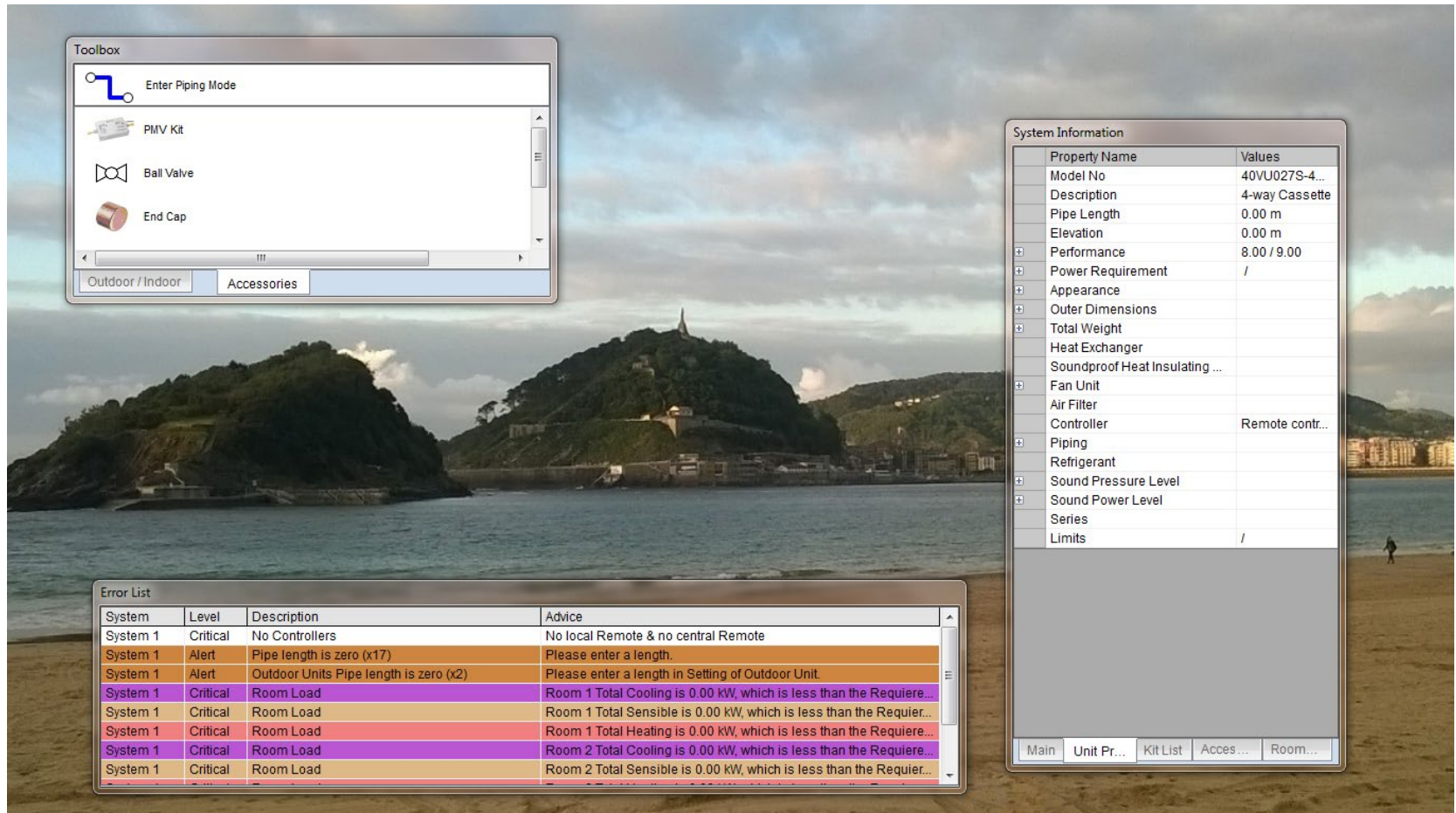


Double click to automatically hide

## 4. Design Window

### Design window:

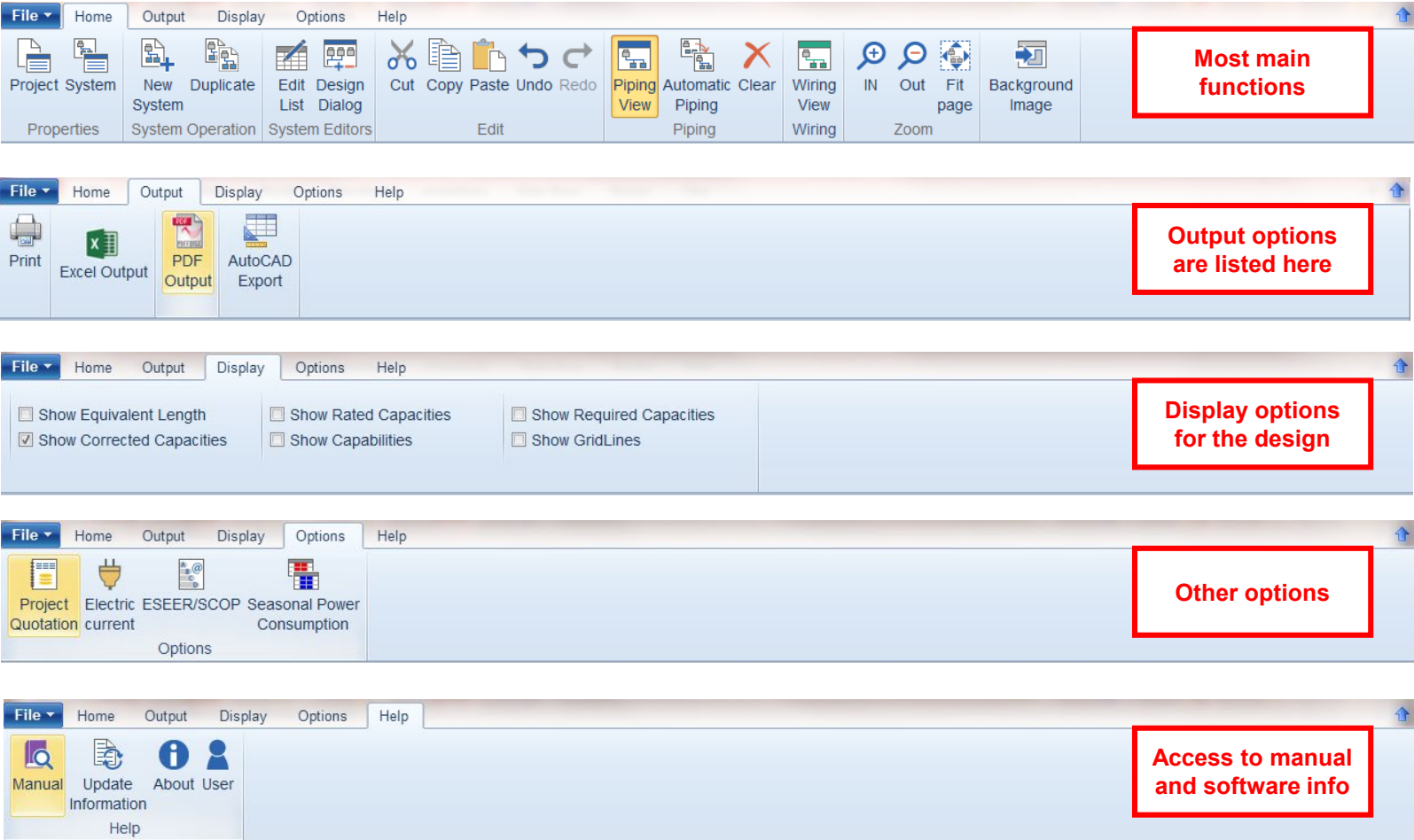
Boxes can also be set outside the software frame:



# 4. Design Window

## Main functions menu:

There are 5 tabs in the top with the main functions:





## 4. Design Window

### Canvas:

Displays the design and its pipework. Can also display the wiring view or the central Controls.

The screenshot displays the Toshiba Selection Tool (Professional) software interface. The main window shows a piping design for 'System 1' with a central controls unit and multiple indoor units connected by pipes. The interface includes a menu bar (File, Home, Output, Display, Options, Help), a toolbar with icons for Piping View, Automatic Piping, Clear Piping, Wiring View, and Wiring, and a zoom section. A 'Tool Box' on the left lists various components like Outdoor Unit, Cassettes, Ducts, and Ceiling. A 'System Information' table on the right provides detailed system data, and a 'System' table at the bottom shows alerts.

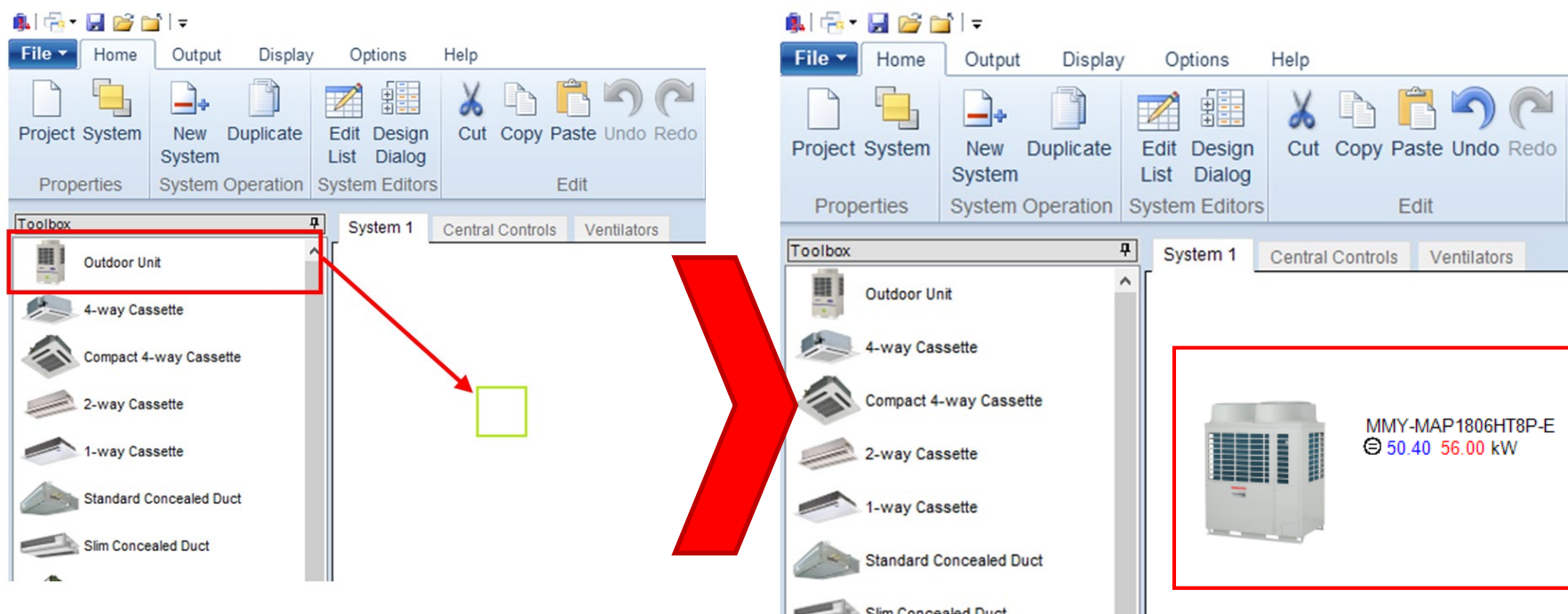
| Property                                | Value    | Limit     |
|---|----------|-----------|
| <b>Total System Check</b>               |          | <b>X</b>  |
| Outdoor Units                           | 0 Unit   | -         |
| Indoor Units (Control P.C.Boards)       | 0 Unit   | -         |
| Outdoor Combined Rated HP               | 0 HP     | -         |
| Outdoor Combined Rated Cooling          | 0.00...  | -         |
| Outdoor Combined Rated Heating          | 0.00...  | -         |
| Indoor Combined Rated Cooling           | 0.00...  | -         |
| Indoor Combined Corrected Cooling       | 0.00...  | -         |
| Indoor Combined Rated Heating           | 0.00...  | -         |
| Indoor Combined Corrected Heating       | 0.00...  | -         |
| Indoor Units Combined Capacity Code     | 0.0      | -         |
| Outdoor Combined Capacity Code          | 0        | -         |
| Capacity Ratio                          | 0.0 %    | 50 - 135% |
| Total Pipe Length                       | 0.00 m   | -         |
| Farthest Piping Real Length             | 0.00 m   | -         |
| Farthest Piping Equivalent Length       | 0.00 m   | -         |
| Farthest Piping From 1st Indoor Bran... | 0.00 m   | -         |
| Farthest Piping From 1st Indoor Bran... | 0.00 m   | -         |
| Farthest Piping Between Outdoor Uni...  | 0.00 m   | -         |
| Main Piping Real Length(L1)             | 0.00 m   | -         |
| Main Piping Equivalent Length(L1e)      | 0.00 m   | -         |
| Greatest Indoor Unit Connecting Pipl... | 0.00 m   | -         |
| Greatest Outdoor Unit Connecting Pi...  | 0.00 m   | -         |
| Greatest Piping Between Branches E...   | 0.00 m   | -         |
| Highest Outdoor Unit                    | 0.00 m   | -         |
| Lowest Outdoor Unit                     | 0.00 m   | -         |
| Highest Indoor Unit                     | 0.00 m   | -         |
| Lowest Indoor Unit                      | 0.00 m   | -         |
| Greatest Height Between Indoor And...   | 0.00 m   | -         |
| Greatest Height Difference Between I... | 0.00 m   | -         |
| Greatest Height Difference Between...   | 0.00 m   | -         |
| Limit Density                           | 0.000... | -         |
| Additional Charge                       | 0.000... | -         |
| Total Charge                            | 0.000... | -         |

| System   | Level | Description                            | Advice  |
|----------|-------|--|---|
| System 1 | Alert | Pipe length is zero (x29)              | Please enter a length.                            |
| System 1 | Alert | Outdoor Units Pipe length is zero (x4) | Please enter a length in Setting of Outdoor Unit. |

## 4. Design Window

### Toolbox:

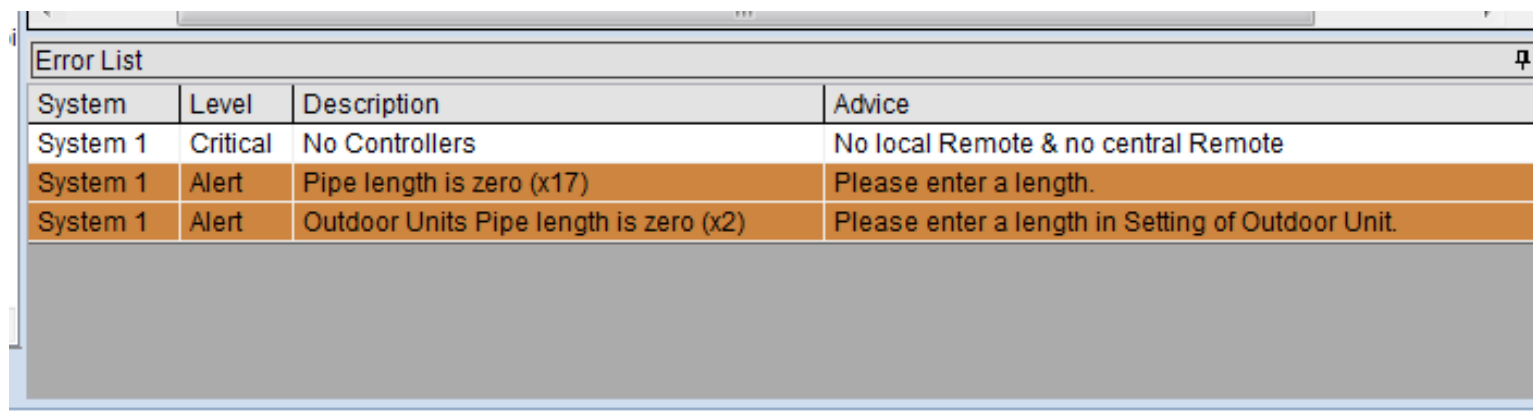
Drag and drop Indoor units, Outdoor Units and Accessories from the toolbox to the canvas



## 4. Design Window

### Error list:

The errors of the design will be displayed here. The user must fix the critical errors or the system will be out of specification.



| System   | Level    | Description                            | Advice  |
|----------|----------|--|---|
| System 1 | Critical | No Controllers                         | No local Remote & no central Remote               |
| System 1 | Alert    | Pipe length is zero (x17)              | Please enter a length.                            |
| System 1 | Alert    | Outdoor Units Pipe length is zero (x2) | Please enter a length in Setting of Outdoor Unit. |

# 4. Design Window

## System information:

There are different tabs displaying

| Property                              | Value    | Limit     |
|---------------------------------------|----------|-----------|
| <b>Total System Check</b>             | <b>X</b> |           |
| Outdoor Units                         | 2 Unit   | -         |
| Indoor Units                          | 9 Unit   | 64 Unit   |
| Outdoor Combined Rated HP             | 36 HP    | -         |
| Outdoor Combined Rated Cooling        | 101...   | -         |
| Outdoor Combined Rated Heating        | 113...   | -         |
| Indoor Combined Rated Cooling         | 72.0...  | -         |
| Indoor Combined Corrected Cooling     | 72.0...  | -         |
| Indoor Combined Rated Heating         | 81.0...  | -         |
| Indoor Combined Corrected Heating     | 81.0...  | -         |
| Indoor Units Combined Capacity C...   | 27.0     | -         |
| Outdoor Combined Capacity Code        | 36       | -         |
| Capacity Ratio                        | 75.0 %   | 50 - 135% |
| Total Pipe Length                     | 0.00 m   | 1000.00 m |
| Farthest Piping Real Length           | 0.00 m   | 180.00 m  |
| Farthest Piping Equivalent Length     | 0.00 m   | 220.00 m  |
| Farthest Piping From 1st Indoor Br... | 0.00 m   | -         |
| Farthest Piping From 1st Indoor Br... | 0.00 m   | 90.00 m   |
| Farthest Piping Between Outdoor...    | 0.00 m   | 25.00 m   |
| Main Piping Real Length(L1)           | 0.00 m   | 100.00 m  |
| Main Piping Equivalent Length(L1e)    | 0.00 m   | 120.00 m  |
| Greatest Indoor Unit Connecting Pl... | 0.00 m   | 30.00 m   |
| Greatest Outdoor Unit Connecting...   | 0.00 m   | 10.00 m   |
| Greatest Piping Between Branches...   | 0.00 m   | 50.00 m   |
| Highest Outdoor Unit                  | 0.00 m   | -         |
| Lowest Outdoor Unit                   | 0.00 m   | -         |
| Highest Indoor Unit                   | 0.00 m   | 40.00 m   |
| Lowest Indoor Unit                    | 0.00 m   | 70.00 m   |
| Greatest Height Between Indoor A...   | 0.00 m   | -         |
| Greatest Height Difference Between... | 0.00 m   | 40.00 m   |
| Greatest Height Difference Between... | 0.00 m   | 5.00 m    |
| Limit Density                         | 0.00     | 0.44      |
| Additional Charge                     | 11.8...  | -         |
| Total Charge                          | 34.8...  | -         |

Displays the properties of the system

| Property Name                | Values                     |
|------------------------------|----------------------------|
| Model No                     | 38VT036S68HTEE             |
| Description                  | Outdoor Unit               |
| Pipe Length                  | 0 m                        |
| Elevation                    | 0 m                        |
| Equivalent HP                | 36                         |
| Region Code                  |                            |
| Performance                  | 36 / 101 / 113             |
| Unit Type                    |                            |
| Units                        | 2 Units                    |
| Power Requirement            |                            |
| Dimensions Packing           |                            |
| Dimensions Unit              |                            |
| Weight Packing               |                            |
| Weight Unit                  |                            |
| Color                        |                            |
| Compressor                   |                            |
| Fan                          |                            |
| Heat Exchanger               |                            |
| Refrigerant                  |                            |
| High Pressure Switch         |                            |
| Power Supply Wiring          | 80.7 / 100                 |
| Control Wiring               |                            |
| Piping                       | 28.6 / 0.0 / 15.9          |
| Sound Pressure               | 64.5 / 66.5                |
| Sound Power                  | 84.5 / 86.5                |
| Max External Static Pressure |                            |
| Operating Temperature Range  | -5.0 - 46.0 / -20.0 - 15.5 |
| Limits                       | 64 / 1                     |
| No Units                     |                            |
| Series                       |                            |

Displays the properties of the selected unit

| Type              | Qty  | Model No        | Description             |
|-------------------|------|-----------------|-------------------------|
| Type:Accessory    |      |                 |                         |
|                   | 9    | 40VPU056S1STEE  | Panel                   |
| Type:Branch       |      |                 |                         |
|                   | 1    | RBM-BT24E       | Outdoor Unit Branch Kit |
|                   | 2    | RBM-BY105E      | Y-Joint                 |
|                   | 4    | RBM-BY205E      | Y-Joint                 |
|                   | 1    | RBM-BY305E      | Y-Joint                 |
|                   | 1    | RBM-BY55E       | Y-Joint                 |
| Type:Indoor Unit  |      |                 |                         |
|                   | 9    | 40VU027S-4S-TEE | 4-way Cassette          |
| Type:Outdoor Unit |      |                 |                         |
|                   | 1    | 38VT036S68HTEE  | Outdoor Unit            |
| Type:Refrigerant  |      |                 |                         |
|                   | 11.8 | R410A           | Refrigerant Type R410A  |

Displays the equipment list of the system

| Qty                      | Model No      | Description                 |
|--------------------------|---------------|-----------------------------|
| Type:Control Accessories |               |                             |
| 1                        | TCB-PX100-PE  | Optional Enclosure of th... |
| 1                        | TCB-PX30MUE   | Optional Enclosure of th... |
| Type:General Accessories |               |                             |
| 1                        | TCB-BC1602UE  | Air-discharge direction kit |
| 1                        | TCB-FF101URE2 | Auxiliary fresh air flange  |
| 1                        | TCB-SP1602UE  | Spacer for height adjust... |

Accessories of the selected unit

| Capacity | Cooling | Sensi... | Heating |
|----------|---------|----------|---------|
| Required | 6.00    | 4.50     | 5.50    |
| Total    | 0.00    | 0.00     | 0.00    |

| Capacity | Cooling | Sensi... | Heating |
|----------|---------|----------|---------|
| Required | 12.00   | 9.00     | 11.00   |
| Total    | 0.00    | 0.00     | 0.00    |

| Capacity | Cooling | Sensi... | Heating |
|----------|---------|----------|---------|
| Required | 18.00   | 13.50    | 16.50   |
| Total    | 0.00    | 0.00     | 0.00    |

| Capacity | Cooling | Sensi... | Heating |
|----------|---------|----------|---------|
| Required | 0       | 0        | 0       |
| Total    | 0.00    | 0.00     | 0.00    |

Room loads info

# Index

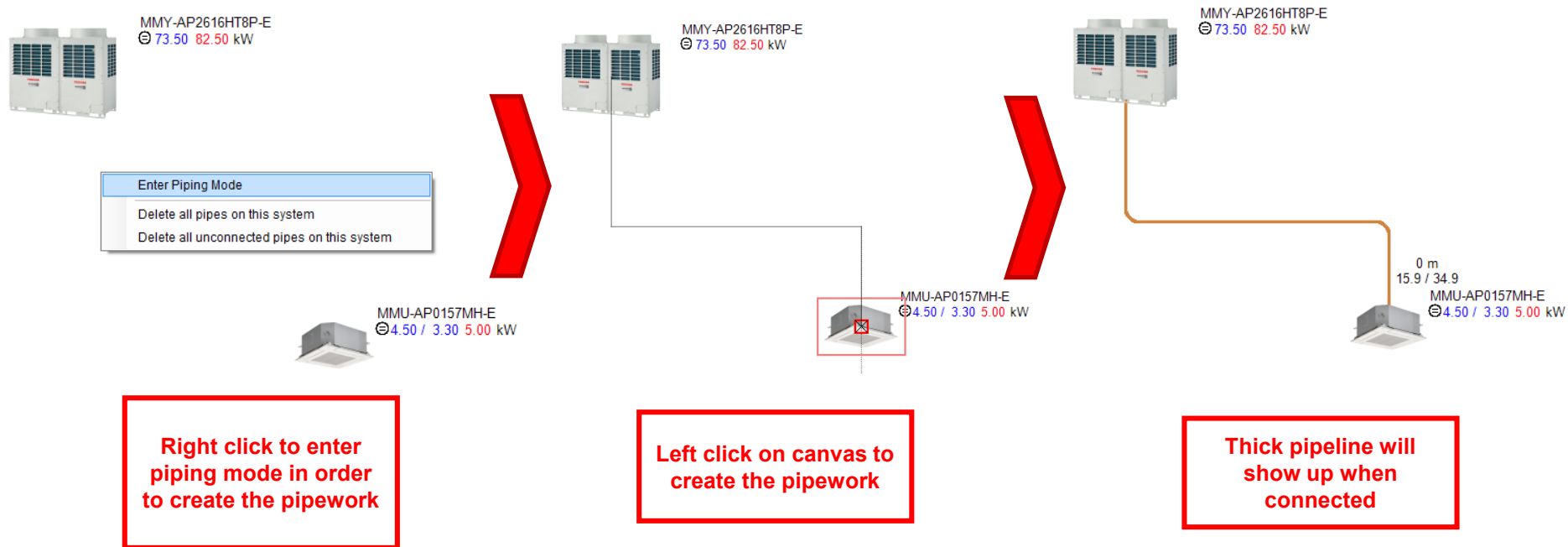
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## 5. System Design

### Piping mode:

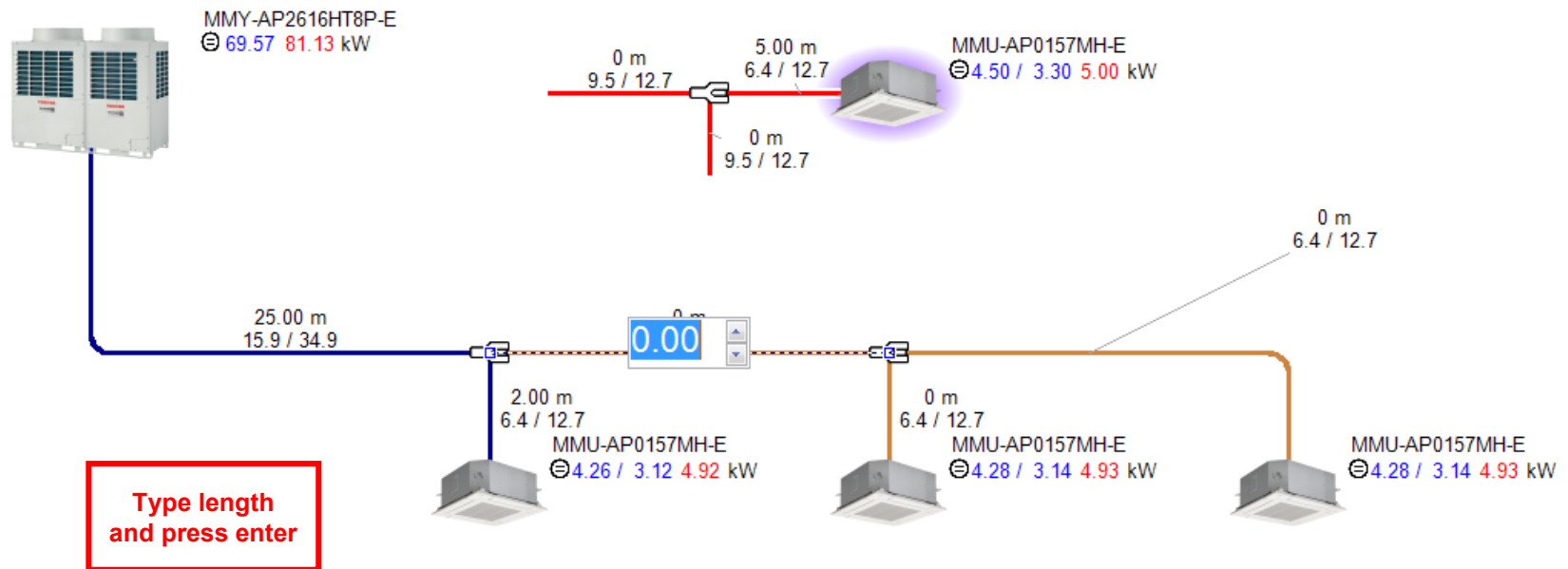
The quotation mode and the design mode will create the design automatically; however, the software offers many more options for a customized design. There are infinite possible combinations for the pipework:



## 5. System Design

### Pipework:

Double click on a pipe to enter its length and once the length has been set, the colour will change to blue. Red pipe means they are not connected to the OU:



## 5. System Design

### Outdoor Unit properties:

Double click over the Outdoor unit to open the Outdoor Unit properties window

Select model manually or set the auto size

Outdoor Unit Property

Type: Super Modular Multi System (SMMS-e)  
MMY-AP2616HT8P-E  Standard  High Efficiency

Autosize 100 %

Outdoor Unit Name

MMY-MAP1406HT8P-E MMY-MAP1206HT8P-E

RBM-BT24E 15.9/28.6 0.00 m 12.7/28.6 0.00 m 15.9/34.9 5.00 m

Accessories  
Header | Follower1  
Slot 1 <none>  
Slot 2 <none>  
Slot 3 <none>  
Slot 4 <none>  
Slot 5 <none>

Capacity Information

|                   |          |
|-------------------|----------|
| Rated Cooling     | 73.50 kW |
| Rated Heating     | 82.50 kW |
| Corrected Cooling | 72.27 kW |
| Corrected Heating | 82.12 kW |
| Required Cooling  | 0.00 kW  |
| Required Heating  | 0.00 kW  |

Electrical Information  
Summary 3N AC+Earth 380-415V 50Hz

OK Cancel

Set the pipe length for Combined OUs

Picture and capacities are displayed

Select the accessories if required



## 5. System Design

# Indoor Unit properties

Double click over any Indoor unit to open the Indoor Unit properties window

Setting of Indoor Units (Manual Sizing)

**Location**  
Room: - none - Rooms...

**Indoor Unit**  
Type: High Wall Standard  
Model: MMK-AP0157HP-E (4.5kW)  
Name: hola Fan Speed: High

**Required Capacity**  
Require Cooling: 0.00 kW  
Require Sensible: 0.00 kW  
Require Heating: 0.00 kW

**Capacity Information**  
Capacity Code: 1.7  
Rated Cooling: 4.50 kW  
Rated Sensible: 3.20 kW  
Rated Heating: 5.00 kW  
Cooling Capability: 4.47 kW  
Sensible Capability: 3.18 kW  
Heating Capability: 4.99 kW  
Corrected Cooling: 4.47 kW  
Corrected Sensible: 3.18 kW  
Corrected Heating: 4.99 kW

**Design Conditions**  
Cooling DB: 27.0 °C  
Cooling WB: 19.0 °C  
Relative Humidity: 47 %  
Heating DB: 20.0 °C

**Controls**  
 Individual  Header  Follower  
Group: group 1 Groups...  
Header Remote: RBC-AMS54E-EN  
 Schedule Timer:  
Follower Remote: - none -

**Pipe Length**  
Pipe Length: 1.00 m  
Pipe Equivalent Length  
Equivalent Length Ratio: Auto 1.2  
or Number of Bends: 90°  
Long radius:  
or Equivalent Length: 1.20 m

**Options**  
Accessories...  
Model Description Qty  
Type: CNCConnectors  
TCB-KBCN7... Connector for CN7... 1  
TCB-KBCN6... Connector for CN6... 1  
TCB-IFCB5-PE Windows Switch D... 1  
Type: ControlAccessories

**PMV kit**  
 Connect  
Elevation (relative to Indoor Unit): 0.00 m  
Pipe length (from Indoor Unit): 0.00 m

**Ceiling Panel**  
Panel Model:  
Elevation (relative to Outdoor unit) Above Outdoor Unit: Auto 0.00 m

Rotation angle (+:Right, -:Left): 0 ° Default

OK Cancel

Select model, size, room and Fan Speed

Individual required capacities and design conditions can be set

Configure the grouping and controls of the unit

Picture and capacities are displayed

Select the accessories if required and set pipe length/height

## 5. System Design

# Ventilators

Currently on a separate tab. Double click over to open properties window

The screenshot shows the Toshiba Selection Tool (Professional) interface. The 'Ventilators' tab is selected in the 'ToolBox' and 'System Editors' sections. A red box highlights the 'Ventilators' tab. The 'Setting of Air to Air Heat Exchanger' dialog box is open, showing various configuration options. A red box highlights the 'Limited options compared to the IU' text at the bottom of the dialog box.

**Setting of Air to Air Heat Exchanger**

**Location**  
Room: - none - Rooms...  
Unit  
Type: Air to Air Heat Exchanger Standard  
Model: VN-M150HE  
Name: Fan Speed: High

**Controls**  
 Individual  Header  Follower  
Header Remote: - none -  
 Schedule Timer:  
Follower Remote:

**Options**  
Accessories...  
**Selected Accessories**  
Model Description Qty  
Limit

**Limited options compared to the IU**

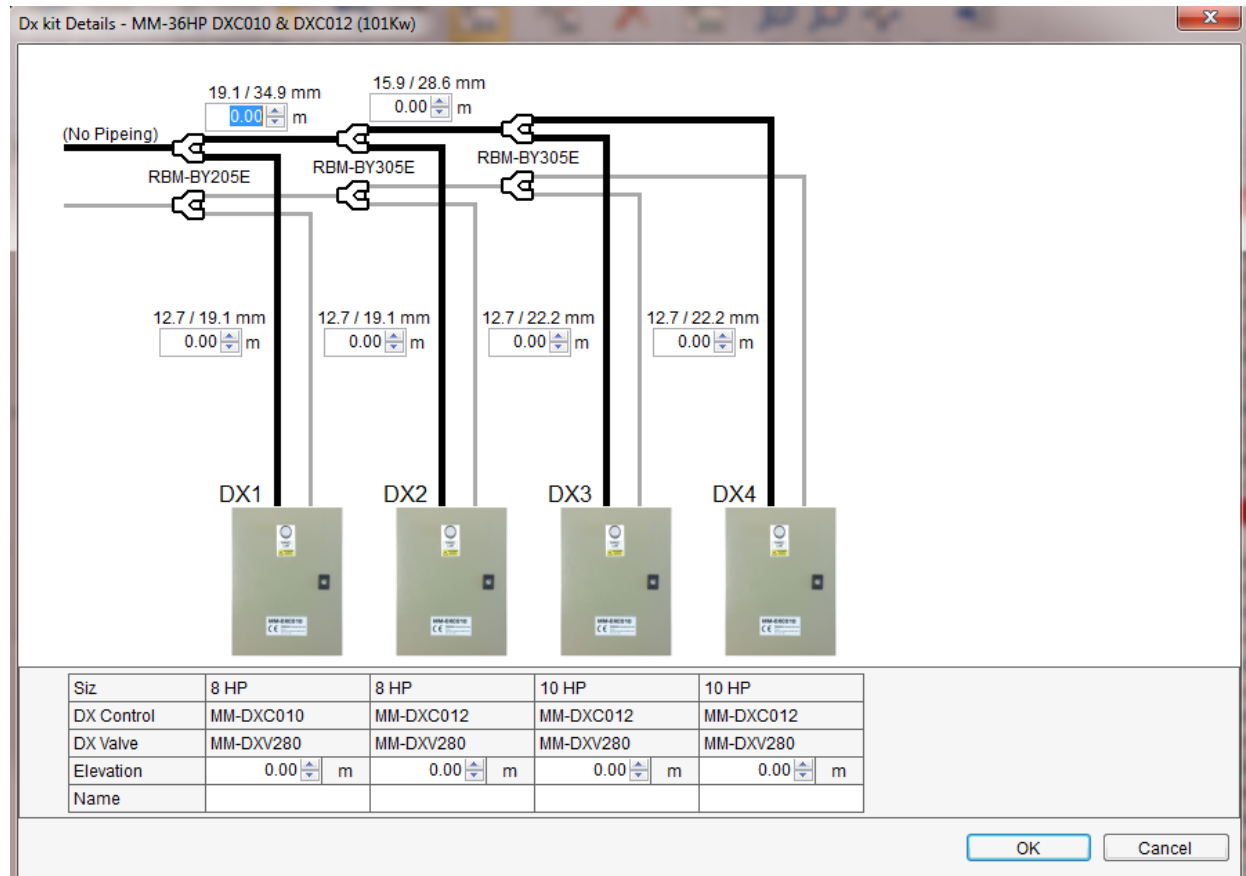
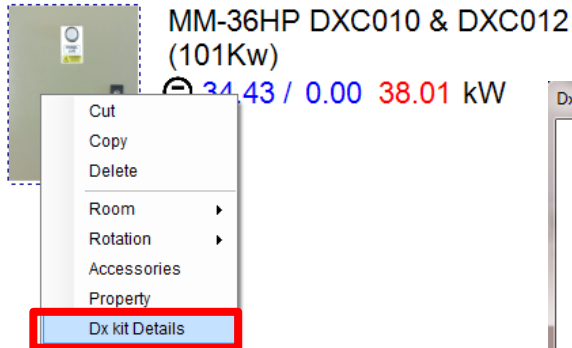
| System      | Level   | Description               |
|-------------|---------|---------------------------|
| System 1    | Alert   | Pipe length is zero (x29) |
| Ventilators | Warning | No Controllers            |

Heat Exchangers  
Main Unit Properties Kit List Accessories  
Project Not Saved  
100%

## 5. System Design

### Dx-kit details

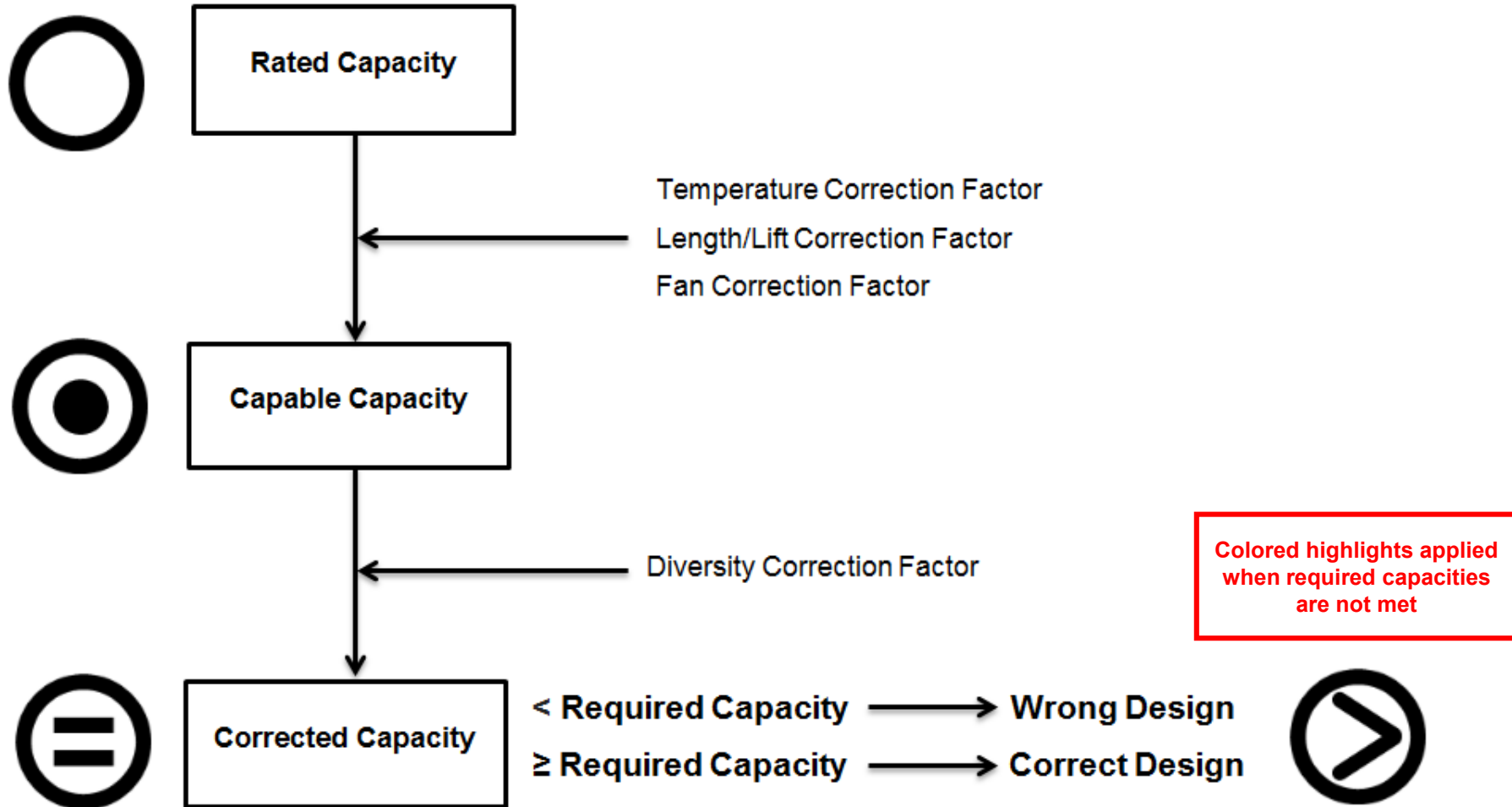
Right click on a DX-kit in order to open the pipework:



## 5. System Design

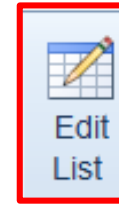
# Capacities calculation

How the capacities are calculated:



# 5. System Design

## Edit list: Configure multiple units properties faster



Click on "Edit List" to open the window

Edit List

System 1 | System 2 | System 3 | System 4 | System 5 | System 6 | System 7

| Indoor Units                        |    |       |                    |                         |            |        | Requirements (kW) |          |         | Corrected (kW) |          |         |
|-------------------------------------|----|-------|--------------------|-------------------------|------------|--------|-------------------|----------|---------|----------------|----------|---------|
| Select                              | No | Image | Type               | Model                   | Fan Speed  | Name   | Cooling           | Sensible | Heating | Cooling        | Sensible | Heating |
| <input checked="" type="checkbox"/> | 1  |       | 4-way Cassette     | MMU-AP0304HP1-E (9.0kW) | High       |        | 0.00              | 0.00     | 0.00    | 4.62           | 3.18     | 5.13    |
| <input type="checkbox"/>            | 2  |       | 4-way Cassette     | MMU-AP0304HP1-E (9.0kW) | High       |        | 0.00              | 0.00     | 0.00    | 4.62           | 3.18     | 5.13    |
| <input type="checkbox"/>            | 3  |       | High Wall Standard | MMK-AP0157HP-E (4.5kW)  | Medium     |        | 0.00              | 0.00     | 0.00    | 2.31           | 1.55     | 2.57    |
| <input type="checkbox"/>            | 4  |       | 4-way Cassette     | MMU-AP0304HP1-E (9.0kW) | High       |        | 0.00              | 0.00     | 0.00    | 4.62           | 3.18     | 5.13    |
| <input type="checkbox"/>            | 5  |       | 4-way Cassette     | MMU-AP0304HP1-E (9.0kW) | High       | abc    | 0.00              | 0.00     | 0.00    | 4.62           | 3.18     | 5.13    |
| <input type="checkbox"/>            | 6  |       | High Wall Standard | MMK-AP0157HP-E (4.5kW)  | MediumPlus | dfg    | 0.00              | 0.00     | 0.00    | 2.31           | 1.60     | 2.57    |
| <input type="checkbox"/>            | 7  |       | 4-way Cassette     | MMU-AP0304HP1-E (9.0kW) | High       | hjk    | 0.00              | 0.00     | 0.00    | 4.62           | 3.18     | 5.13    |
| <input type="checkbox"/>            | 8  |       | 4-way Cassette     | MMU-AP0304HP1-E (9.0kW) | High       | fdg    | 0.00              | 0.00     | 0.00    | 4.62           | 3.18     | 5.13    |
| <input type="checkbox"/>            | 9  |       | 4-way Cassette     | MMU-AP0304HP1-E (9.0kW) | High       | (copy) | 0.00              | 0.00     | 0.00    | 4.62           | 3.18     | 5.13    |
| <input type="checkbox"/>            | 10 |       | High Wall Standard | MMK-AP0157HP-E (4.5kW)  | High       | (copy) | 0.00              | 0.00     | 0.00    | 2.31           | 1.64     | 2.57    |
| <input type="checkbox"/>            | 11 |       | 4-way Cassette     | MMU-AP0304HP1-E (9.0kW) | High       | (copy) | 0.00              | 0.00     | 0.00    | 4.62           | 3.18     | 5.13    |
| <input type="checkbox"/>            | 12 |       | 4-way Cassette     | MMU-AP0304HP1-E (9.0kW) | High       |        | 0.00              | 0.00     | 0.00    | 4.62           | 3.18     | 5.13    |
| <input type="checkbox"/>            | 13 |       | High Wall Standard | MMK-AP0157HP-E (4.5kW)  | High       |        | 0.00              | 0.00     | 0.00    | 2.31           | 1.64     | 2.57    |
| <input type="checkbox"/>            | 14 |       | 4-way Cassette     | MMU-AP0304HP1-E (9.0kW) | High       |        | 0.00              | 0.00     | 0.00    | 4.62           | 3.18     | 5.13    |

Copy selected units

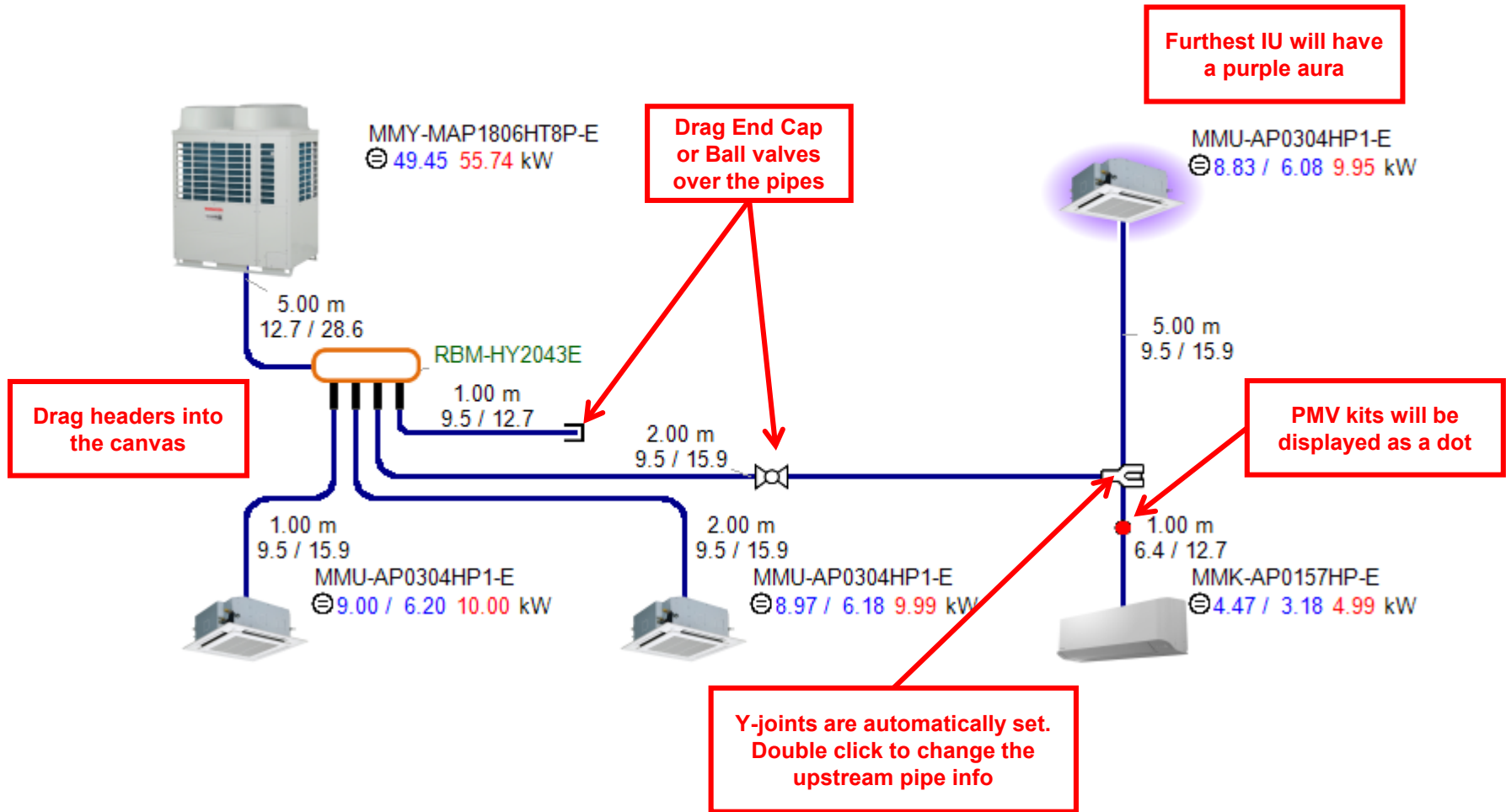
Modify the setting of multiple units at the same time

Copy all selected | Paste to current system | Close

## 5. System Design

### Accessories:

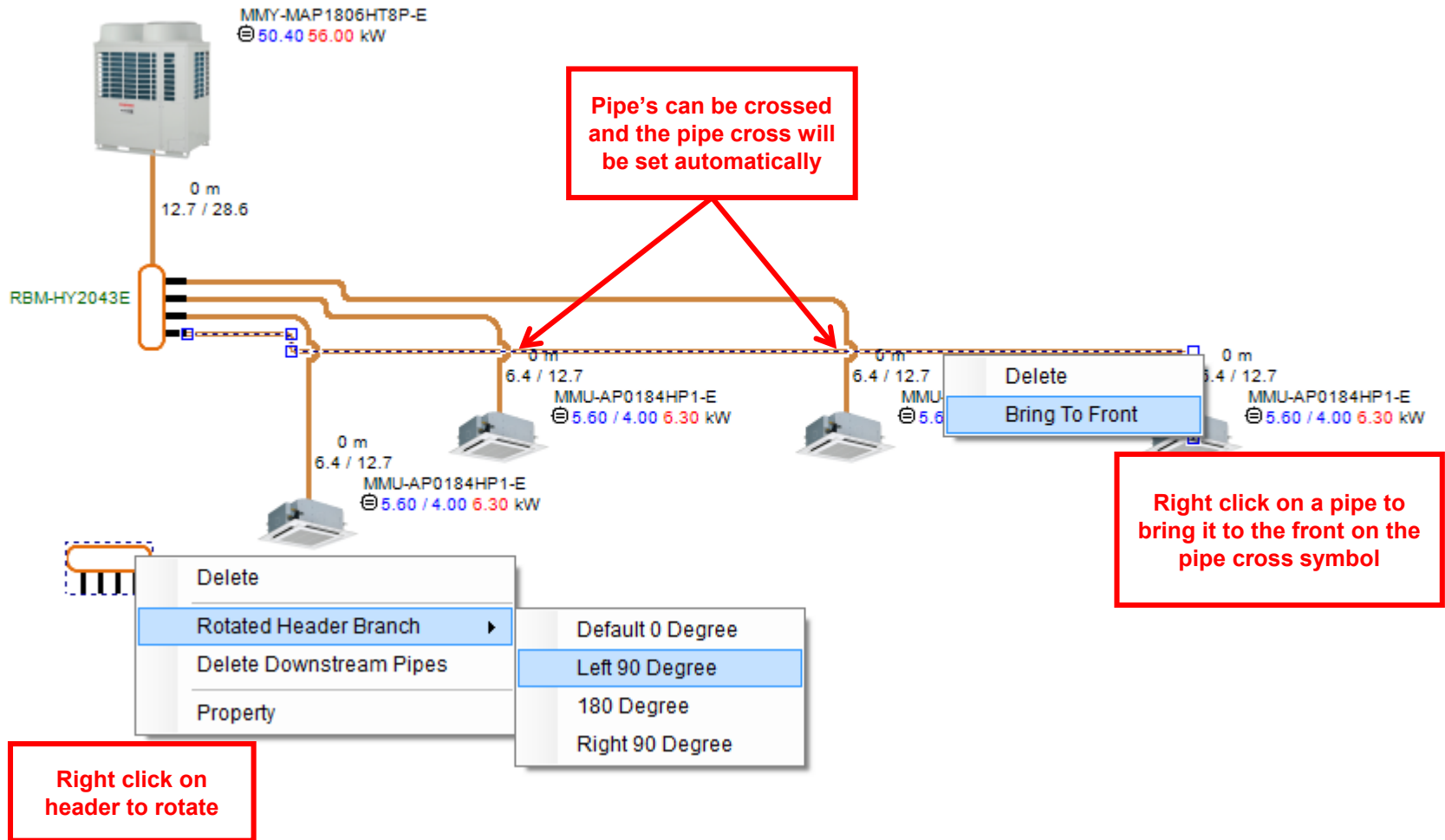
The user can use multiple accessories on the design:



## 5. System Design

### Accessories:

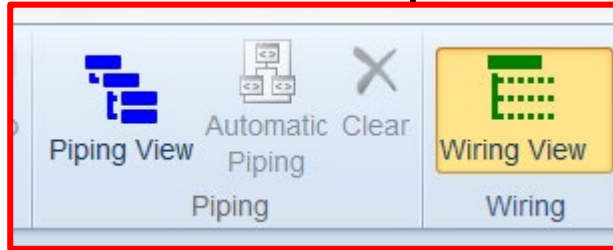
The user can use multiple accessories on the design:



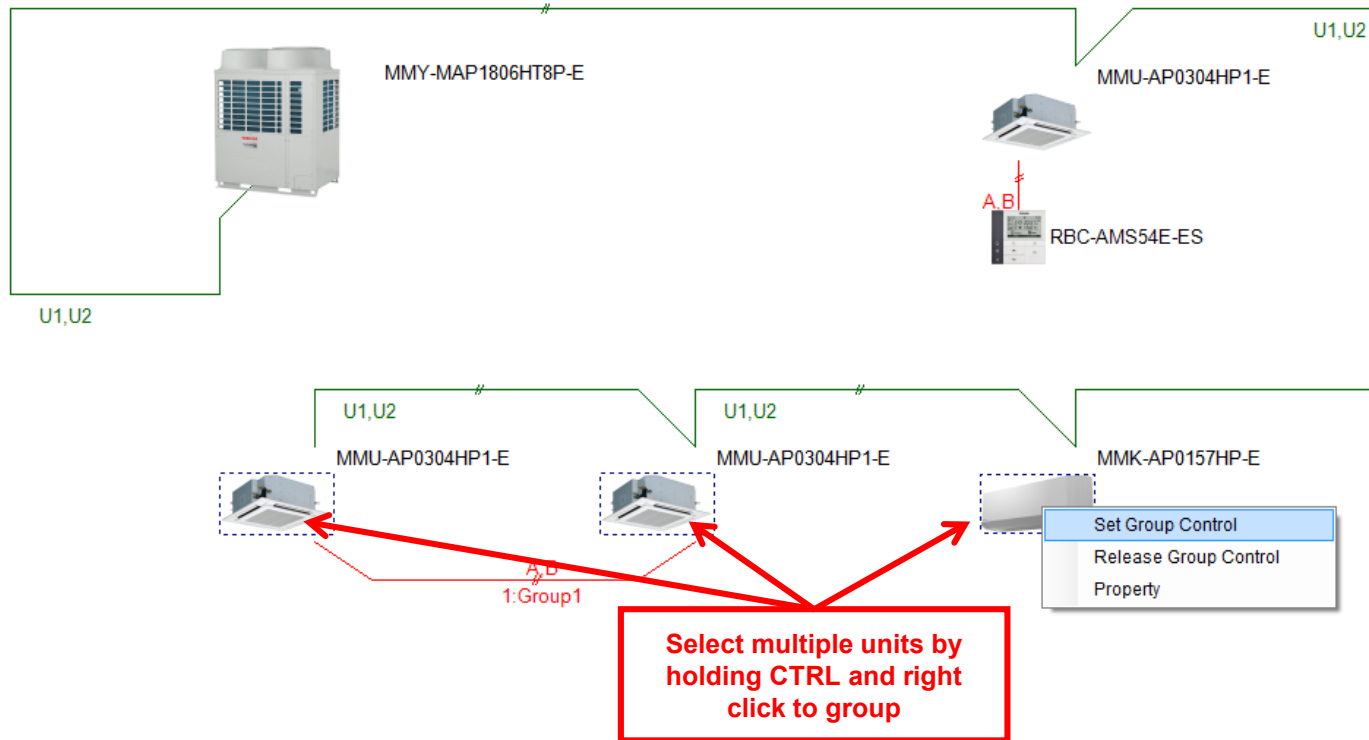
## 5. System Design

### Wiring view:

The user can use multiple accessories on the design:



Alternate between wiring view and piping view using the button on home tab





## 5. System Design

### Background picture

Use the background menu to set the background pictures:

The screenshot shows the Toshiba Selection Tool (Professional) interface. The 'Background Image' menu item in the top toolbar is highlighted with a red box. A red callout box points to it with the text: "Set a different per floor clicking on it on every floor".

The 'Background Dialog' box is also highlighted with a red border. It contains a 'Load background image' button, a preview window showing a floor plan with labels like 'ENSUITE', 'ATTIC ROOM', and 'EAVES STORAGE', and an 'Image size Adjustment' panel. The 'Image size Adjustment' panel includes fields for X Position (415.9681), Y Position (400.0000), Size (Horizontal) (1.0000), and Size (Vertical) (1.0000). There is a 'Keep aspect ratio' checkbox and an 'Opacity' slider set to 20%. 'Set', 'OK', and 'Cancel' buttons are also present.

A red callout box points to the 'Image size Adjustment' panel with the text: "Change picture size, opacity or move it around".

On the right side of the interface, there is a 'System Information' table with columns for 'Value' and 'Limit'. A portion of the table is visible:

|                | Value   | Limit   |
|----------------|---------|---------|
|                | 1 Unit  | -       |
| P.C.Boards)    | 20 Unit | 36 Unit |
| ated HP        | 16 HP   | -       |
| ated Cooling   | 45.0... | -       |
| ated Heating   | 50.0... | -       |
| ed Cooling     | 145...  | -       |
| rected Cooling | 49.5... | -       |
| ed Heating     | 163     | -       |

Below this table, another table is partially visible with columns for 'Value' and 'Limit':

|                  |        |          |
|------------------|--------|----------|
| 1st Indoor Br... | 0.00 m | -        |
| 1st Indoor Br... | 0.00 m | 90.00 m  |
| en Outdoor...    | 0.00 m | 25.00 m  |
| gth(L1)          | 0.00 m | 100.00 m |
| nt Length(L1e)   | 0.00 m | 120.00 m |
| Connecting Pi... | 0.00 m | -        |
| Connecting...    | 0.00 m | 10.00 m  |
| een Branches...  | 0.00 m | 50.00 m  |
|                  | 0.00 m | -        |
|                  | 0.00 m | -        |
|                  | 0.00 m | 40.00 m  |
|                  | 0.00 m | 70.00 m  |

## 5. System Design

### Print & PDF output:

Update the Seasonal Power Consumption data to include

it:

Set regions and view graphs

Seasonal Power Consumption

System Name: System 1

Country: Turkey

City: Istanbul

Outdoor Temperature: Min 0.2 °C Max 32.2 °C

Design condition

Theremo Off Temperature: 15 °C

Period P1: 01/01/2018 ~ 01/04/2018 P2: 01/11/2018 ~ 31/12/2018

| Run Time | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|----------|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Mon.     |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Tue.     |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Wed.     |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Thu.     |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Fri.     |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Sat.     |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Sun.     |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

Use Cooling

Theremo Off Temperature: 17 °C

Period: 01/06/2018 ~ 15/09/2018

| Run Time | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|----------|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Mon.     |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Tue.     |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Wed.     |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Thu.     |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Fri.     |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Sat.     |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Sun.     |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

Close

Design conditions should not be much higher than the Tmax

Operating time per hour and year

# 5. System Design

## SPC:

SPC calculates the Power Input per every hour on the year based on the load and the design temperatures. The result is an estimate of the OU consumption per year

Same method but different number for each OU

MMY-MAP0806HT8P-E (8HP, 22.4kW system)

| Cooling                    |   | Compressor + Outdoor Fan Power consumption (kW) |      |              |      |              |      |              |      |              |      |              |      |              |      |              |      |
|----------------------------|---|---|------|--------------|------|--------------|------|--------------|------|--------------|------|--------------|------|--------------|------|--------------|------|
| Outdoor Unit Dry-Bulb (°C) | Outdoor Unit 100% Cooling Capacity (kW) | 100% Capacity                                   |      | 90% Capacity |      | 80% Capacity |      | 70% Capacity |      | 60% Capacity |      | 50% Capacity |      | 40% Capacity |      | 30% Capacity |      |
|                            |   | TC  | PI   | TC           | PI   | TC           | PI   | TC           | PI   | TC           | PI   | TC           | PI   | TC           | PI   | TC           | PI   |
|                            |   | (kW)  | (kW) | (kW)         | (kW) | (kW)         | (kW) | (kW)         | (kW) | (kW)         | (kW) | (kW)         | (kW) | (kW)         | (kW) | (kW)         | (kW) |
| 40 °C                      | 20.8                                    | 20.8  | 5.99 | 18.8         | 4.85 | 16.7         | 3.89 | 14.6         | 3.09 | 12.5         | 2.43 | 10.4         | 1.89 | 8.34         | 1.47 | 6.25         | 1.15 |
| 39 °C                      | 21.2                                    | 21.2  | 5.90 | 19.1         | 4.78 | 16.9         | 3.84 | 14.8         | 3.04 | 12.7         | 2.39 | 10.6         | 1.87 | 8.47         | 1.45 | 6.35         | 1.13 |
| 37 °C                      | 21.8                                    | 21.8  | 5.72 | 19.6         | 4.64 | 17.5         | 3.72 | 15.3         | 2.95 | 13.1         | 2.32 | 10.9         | 1.81 | 8.73         | 1.41 | 6.54         | 1.10 |
| 35 °C                      | 22.4                                    | 22.4  | 5.54 | 20.2         | 4.49 | 17.9         | 3.60 | 15.7         | 2.86 | 13.4         | 2.25 | 11.2         | 1.75 | 8.96         | 1.36 | 6.72         | 1.07 |
| 32 °C                      | 22.4                                    | 22.4  | 5.10 | 20.2         | 4.15 | 17.9         | 3.34 | 15.7         | 2.66 | 13.4         | 2.10 | 11.2         | 1.65 | 8.96         | 1.29 | 6.72         | 1.03 |
| 31 °C                      | 22.4                                    | 22.4  | 4.72 | 20.2         | 3.85 | 17.9         | 3.10 | 15.7         | 2.48 | 13.4         | 1.97 | 11.2         | 1.55 | 8.96         | 1.22 | 6.72         | 1.00 |
| 30 °C                      | 22.4                                    | 22.4  | 4.55 | 20.2         | 3.71 | 17.9         | 3.00 | 15.7         | 2.40 | 13.4         | 1.90 | 11.2         | 1.50 | 8.96         | 1.18 | 6.72         | 0.98 |
| 29 °C                      | 22.4                                    | 22.4  | 4.38 | 20.2         | 3.58 | 17.9         | 2.89 | 15.7         | 2.32 | 13.4         | 1.84 | 11.2         | 1.46 | 8.96         | 1.15 | 6.72         | 0.96 |
| 27 °C                      | 22.4                                    | 22.4  | 4.08 | 20.2         | 3.34 | 17.9         | 2.70 | 15.7         | 2.17 | 13.4         | 1.73 | 11.2         | 1.38 | 8.96         | 1.09 | 6.72         | 0.92 |
| 25 °C                      | 22.4                                    | 22.4  | 3.80 | 20.2         | 3.11 | 17.9         | 2.53 | 15.7         | 2.04 | 13.4         | 1.63 | 11.2         | 1.30 | 8.96         | 1.03 | 6.72         | 0.83 |
| 23 °C                      | 22.4                                    | 22.4  | 3.62 | 20.2         | 2.97 | 17.9         | 2.42 | 15.7         | 1.95 | 13.4         | 1.57 | 11.2         | 1.25 | 8.96         | 1.00 | 6.72         | 0.80 |
| 21 °C                      | 22.4                                    | 22.4  | 3.54 | 20.2         | 2.91 | 17.9         | 2.37 | 15.7         | 1.92 | 13.4         | 1.54 | 11.2         | 1.23 | 8.96         | 0.99 | 6.72         | 0.80 |
| 20 °C                      | 22.4                                    | 22.4  | 3.51 | 20.2         | 2.88 | 17.9         | 2.35 | 15.7         | 1.90 | 13.4         | 1.53 | 11.2         | 1.23 | 8.96         | 0.98 | 6.72         | 0.79 |
| 19 °C                      | 22.4                                    | 22.4  | 3.47 | 20.2         | 2.86 | 17.9         | 2.33 | 15.7         | 1.89 | 13.4         | 1.52 | 11.2         | 1.22 | 8.96         | 0.98 | 6.72         | 0.79 |
| 17 °C                      | 22.4                                    | 22.4  | 3.41 | 20.2         | 2.81 | 17.9         | 2.30 | 15.7         | 1.86 | 13.4         | 1.50 | 11.2         | 1.21 | 8.96         | 0.97 | 6.72         | 0.79 |
| 15 °C                      | 22.4                                    | 22.4  | 3.36 | 20.2         | 2.77 | 17.9         | 2.27 | 15.7         | 1.84 | 13.4         | 1.49 | 11.2         | 1.20 | 8.96         | 0.97 | 6.72         | 0.78 |

Many internal factors (set temp, Ambient Temp, Capacities, nominal power...) are used to calculate the capacity and the power input

Calculated per operating hour during the year and results on the output

If OU design temp is higher than the Region Tmax, the load wont reach 100% giving higher numbers

TC : Total Capacity PI : Power Input  
Indoor air temperature conditions : 27.0°C dry-bulb / 19.0°C wet bulb

Calculates the load linearly between Thermo\_off and T\_design

# Index

---

1. Introduction
2. Set up
3. New Project
4. Design Window
5. System Design
6. **Central Controllers**
7. Output

## 6. Central Controls

### Central Controls tab:

The user can design the Central Controls of the project:

The screenshot displays a software interface with a top navigation bar containing tabs for System 1 through System 7, Central Controls, Ventilators, and 3D View. The 'Central Controls' tab is highlighted with a red box. On the left, a 'Tool Box' lists various components such as 'Schedule timer [TCB-EXS21TLE]', '16way ON-OFF controller [TCB-CC1]', 'Compliant Manager [BMS-CM1280TL]', 'Smart Manager [BMS-SM1280H1SE]', 'Smart Manager with Data Analyse [ ]', 'Touch Screen [BMS-CT5121E]', 'Touch Screen [TCB-TSC640-PY]', 'Digital I/O Relay Interface [BMS-IFDC]', 'Energy Monitoring Interface [BMS-IF]', 'Relay Interface [BMS-IFLSV4E]', 'interface [BMS]', 'ce [TCB-IFMB64]', and 'Lonworks interface [TCB-IFLN642I]'. A red arrow points from the '16way ON-OFF controller' component to a callout box. The main workspace shows three system panels: 'System 1 Line Address : 14', 'System 2 Line Address : 15', and 'System 3 Line Address : 15'. Each panel contains a schematic diagram. A red dot is visible on the 'System 2' panel, with a red arrow pointing to it from a callout box. Another red arrow points from the '16way ON-OFF controller' component to this dot. A third red arrow points from the '16way ON-OFF controller' component to the 'System 2' panel. A fourth red arrow points from the '16way ON-OFF controller' component to the 'System 3' panel.

Click on "Central Controls" tab in order to open the swap the canvas

Drag the controls over the system until you see a green dot

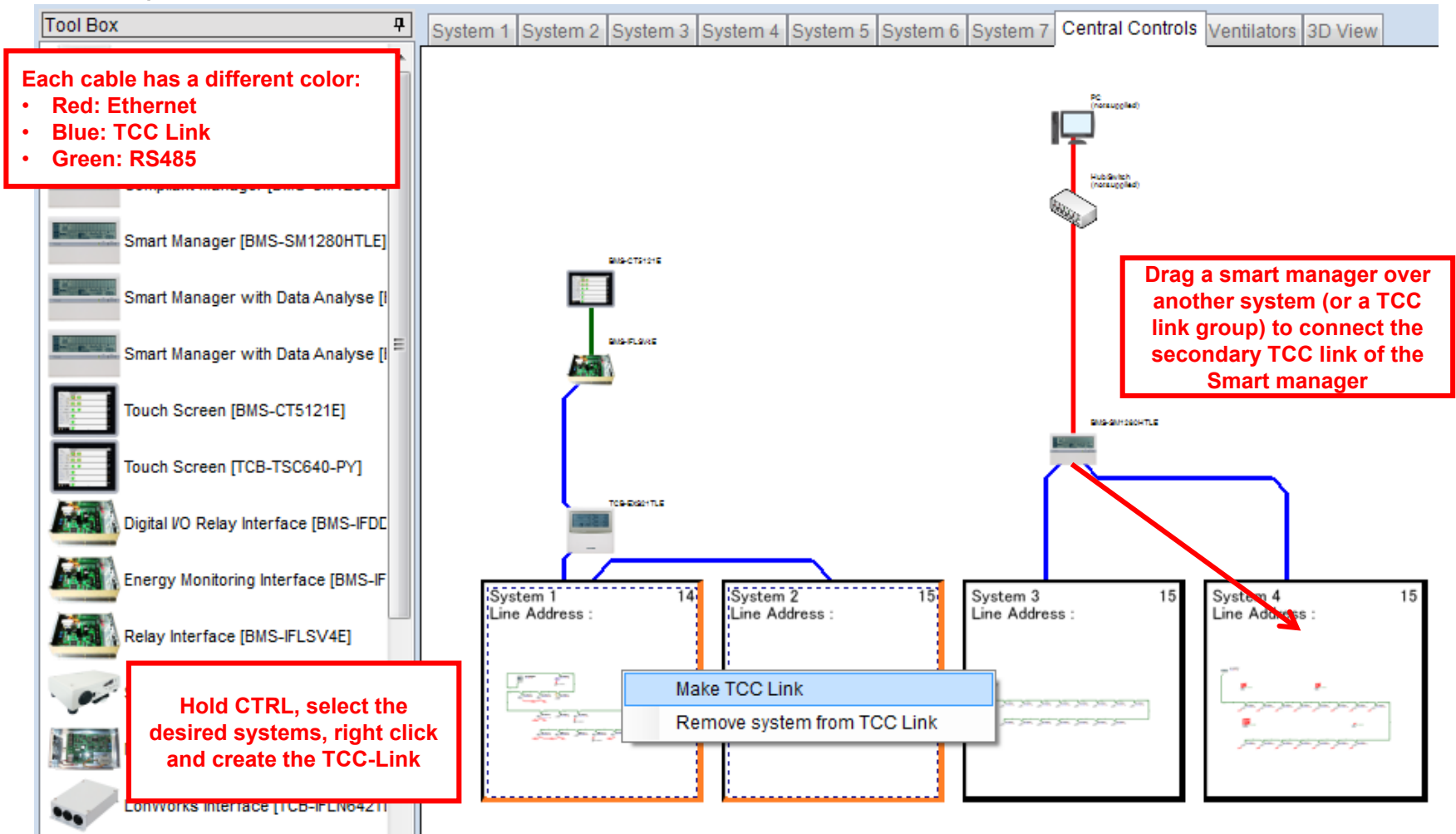
The toolbox will now display the central control and multiple interfaces

Each system is represented as a box and the number on the top right indicates the number of IUs in the system

## 6. Central Controls

### TCC-Link:

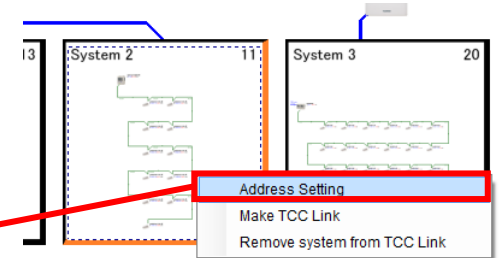
The systems can be connected with a TCC link:



## 6. Central Controls

### Address Setting:

The address for all the units can be set.  
Right click on a system to set them:



Address setting

| No | Model             | Indoor Unit No | Floor | Room | Unit Name | Parent Indoor Unit No. | Group Address | Line Address | Indoor Unit Address |
|----|-------------------|----------------|-------|------|-----------|------------------------|---------------|--------------|---------------------|
| 1  | MMY-MAP1606HT8P-E | -              |       | -    |           | -                      | -             |              | -                   |
| 2  | MMU-AP0094HP1-E   | System 1-1     |       |      |           | -                      | 0             |              | 1                   |
| 3  | MMU-AP0094HP1-E   | System 1-2     |       |      |           | -                      | 0             |              | 2                   |
| 4  | MMU-AP0094HP1-E   | System 1-3     |       |      |           | -                      | 0             |              | 3                   |
| 5  | MMU-AP0094HP1-E   | System 1-4     |       |      |           | -                      | 0             |              | 4                   |
| 6  | MMU-AP0094HP1-E   | System 1-5     |       |      |           | -                      | 0             |              | 5                   |
| 7  | MMU-AP0094HP1-E   | System 1-6     |       |      |           | -                      | 0             |              | 6                   |
| 8  | MMU-AP0092WH1     | System 1-7     |       |      |           | -                      | 0             |              | 7                   |
| 9  | MMU-AP0092WH1     | System 1-8     |       |      |           | -                      | 0             |              | 8                   |
| 10 | MMU-AP0092WH1     | System 1-9     |       |      |           | -                      | 0             |              | 9                   |
| 11 | MMU-AP0092WH1     | System 1-10    |       |      |           | -                      | 0             |              | 10                  |
| 12 | MMU-AP0092WH1     | System 1-11    |       |      |           | -                      | 0             |              | 11                  |
| 13 | MMU-AP0092WH1     | System 1-12    |       |      |           | -                      | 0             |              | 12                  |
| 14 | MMU-AP0092WH1     | System 1-13    |       |      |           | -                      | 0             |              | 13                  |
| 15 | MMU-AP0092WH1     | System 1-14    |       |      |           | -                      | 0             |              | 14                  |
| 16 | MMU-AP0092WH1     | System 1-15    |       |      |           | -                      | 0             |              | 15                  |
| 17 | MMU-AP0092WH1     | System 1-16    |       |      |           | -                      | 0             |              | 16                  |

Automatic setting

Set the Address to the units on the system

OK Cancel

# Index

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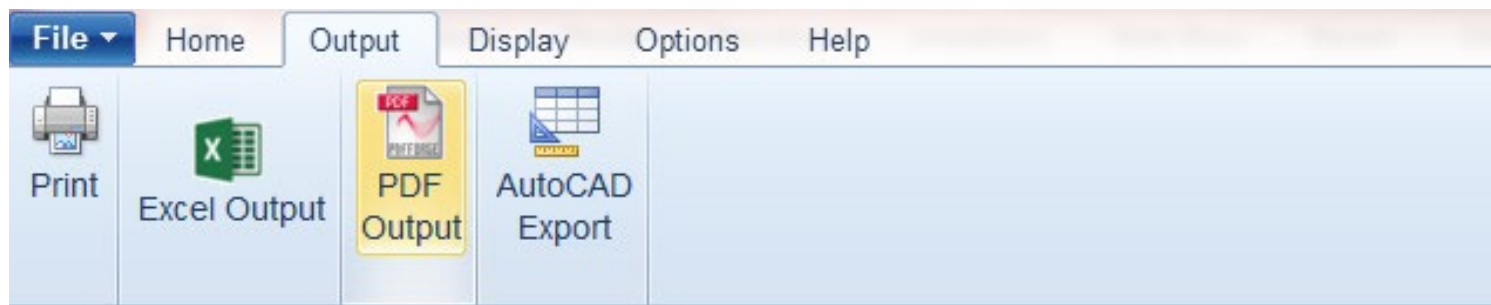
1. Introduction
2. Set up
3. New Project
4. Design Window
5. System Design
6. Central Controllers
7. Output



## 7. Output

### Output options:

On the Output tab, the user can create multiple outputs for the designed project:

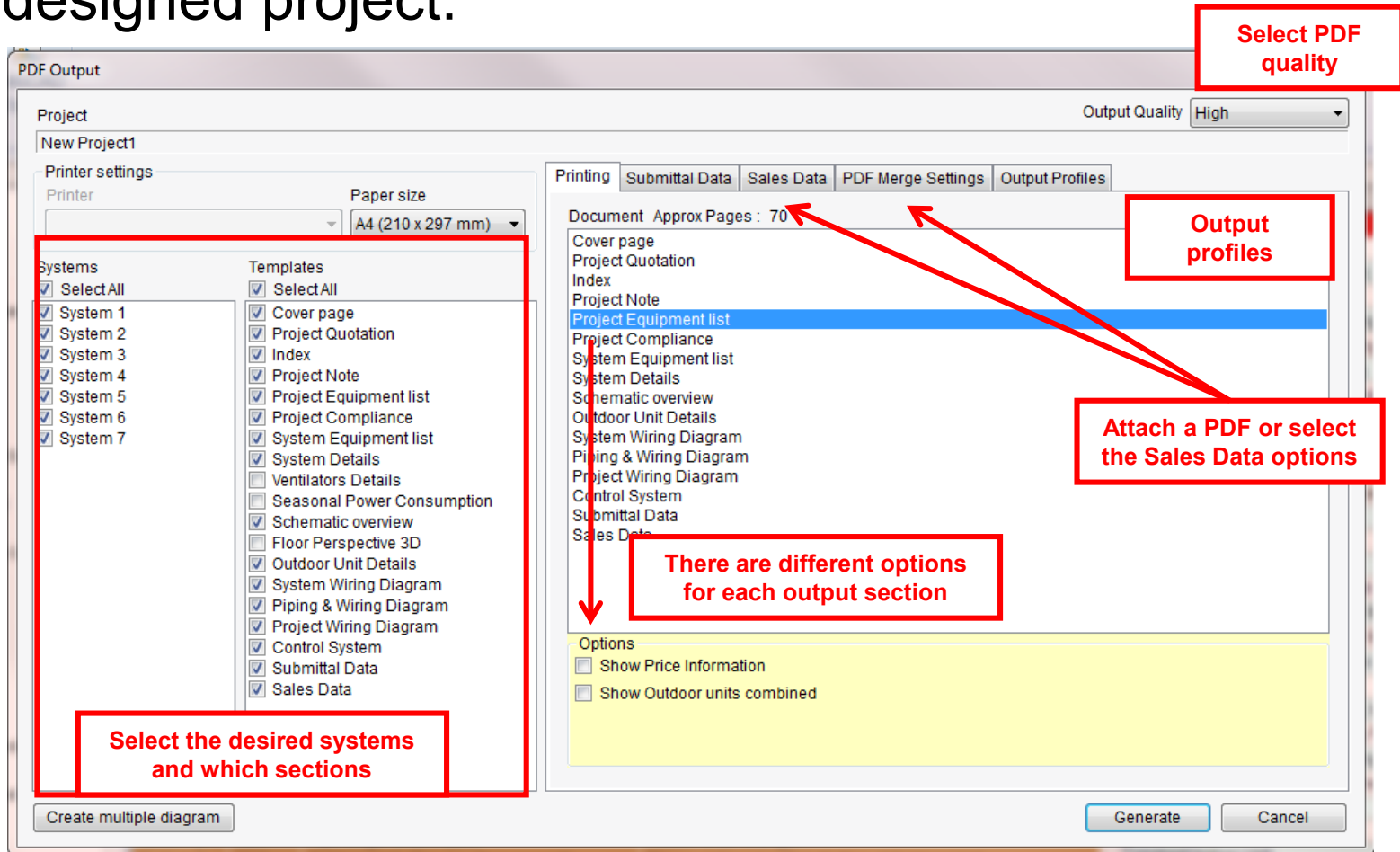


The print and the PDF output are the same, the differences is that the print option will print it and the PDF will save it as a PDF on the computer

## 7. Output

### Print & PDF output:

On the Output tab, the user can create multiple outputs for the designed project:



# 7. Output

## Print & PDF output:

After printing or saving the PDF, a professional output will be created:

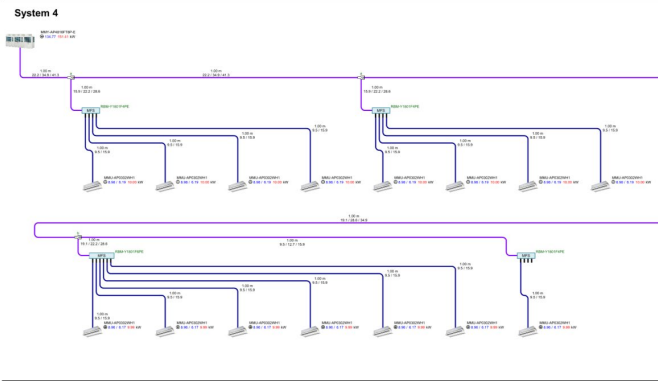
TOSHIBA

Project Name: New Project1  
 Created Date: 06/09/2018  
 Client Name:



TOSHIBA

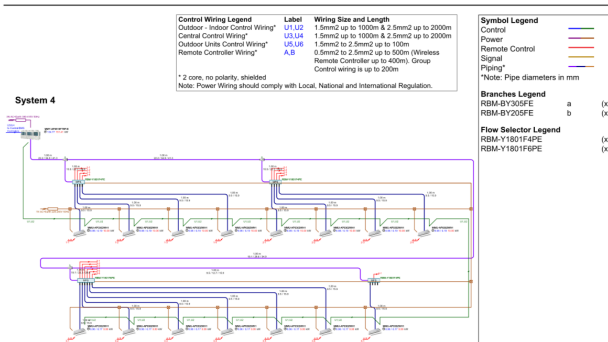
### Schematic Overview



Project Name: New Project1  
 Prepared By: \_\_\_\_\_ Revision: \_\_\_\_\_ Version: 1.2.10  
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TOSHIBA

### Piping & Wiring Diagram



Project Name: New Project1  
 Prepared By: \_\_\_\_\_ Revision: \_\_\_\_\_ Version: 1.2.10  
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TOSHIBA

### System Equipment List

**System 1**

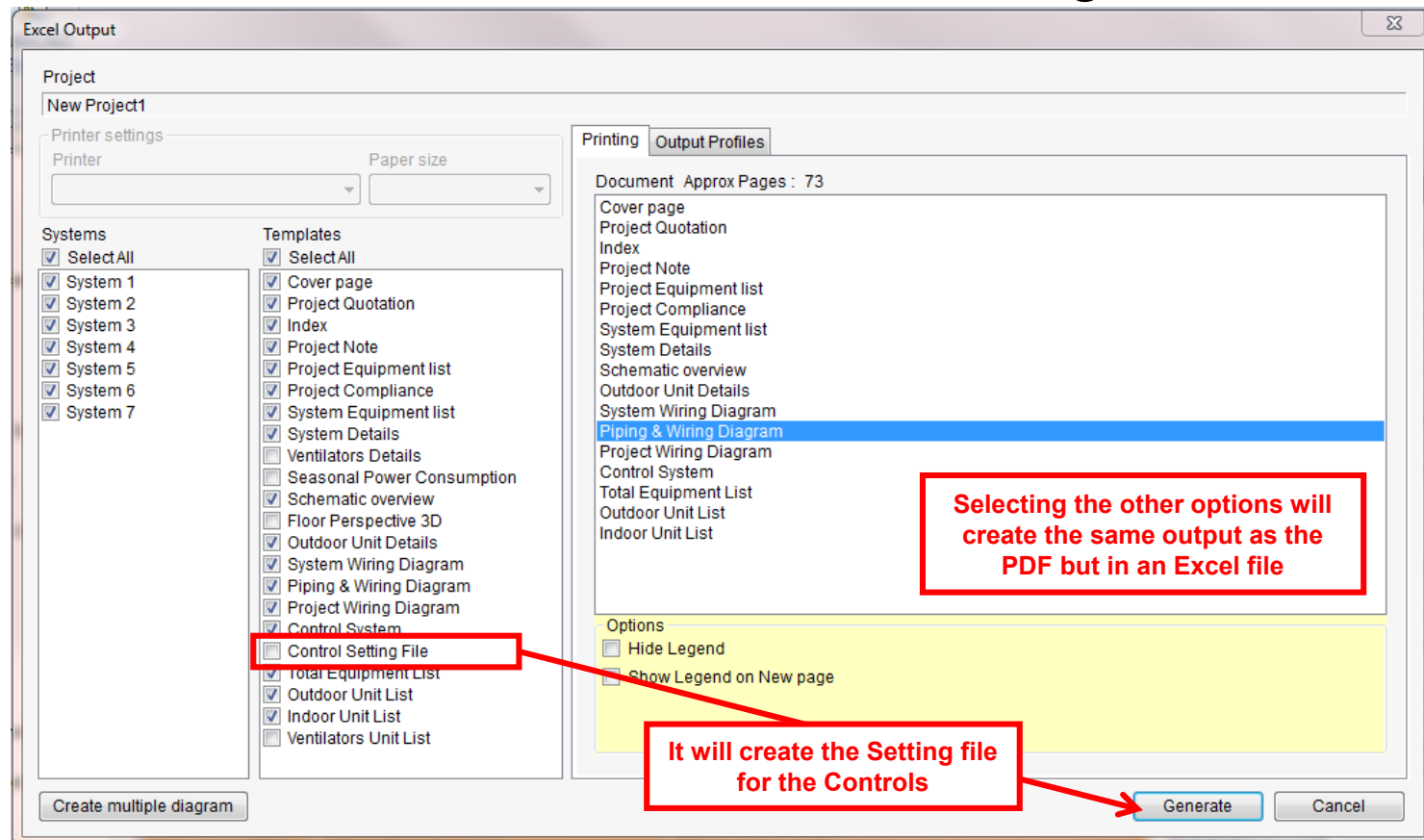
| Outdoor Units                                | Quantity                | Description                          |                |             |
|--|-------------------------|--------------------------------------|----------------|-------------|
| RMV-AP438HTSP-E                              | 1                       | Super Modular Multi System (SMMS-a)  |                |             |
| RMV-AM438HTSP-E                              |                         | Super Modular Multi System (SMMS-a)  |                |             |
| Indoor Units                                 | Quantity                | Description                          |                |             |
| MMS-AP438HTSP-E                              | 15                      | 3.2HP 4-way Cassette                 |                |             |
| Y Joints                                     | Quantity                | Description                          |                |             |
| RBM-BT24E                                    | 2                       | Outdoor Unit Branch Kit              |                |             |
| RBM-BY305E                                   | 6                       | Y-Joint                              |                |             |
| RBM-BY205E                                   |                         | Y-Joint                              |                |             |
| RBM-BY105E                                   |                         | Y-Joint                              |                |             |
| Accessories                                  | Quantity                | Description                          |                |             |
| RBC-U31PG(W)-E                               |                         | Ceiling Panel                        |                |             |
| Piping Length                                | Quantity                | Description                          |                |             |
| Pipe Diameter                                | Total Length            | Gas Side                             | Discharge Side | Liquid Side |
| 9.5mm  | 0.00 m                  | 0.00 m                               | 0.00 m         | 0.00 m      |
| 12.7mm                                       | 0.00 m                  | 0.00 m                               | 0.00 m         | 0.00 m      |
| 15.8mm                                       | 0.00 m                  | 0.00 m                               | 0.00 m         | 0.00 m      |
| 19.1mm                                       | 0.00 m                  | 0.00 m                               | 0.00 m         | 0.00 m      |
| 22.2mm                                       | 0.00 m                  | 0.00 m                               | 0.00 m         | 0.00 m      |
| 28.6mm                                       | 0.00 m                  | 0.00 m                               | 0.00 m         | 0.00 m      |
| 34.9mm                                       | 0.00 m                  | 0.00 m                               | 0.00 m         | 0.00 m      |
| 41.3mm                                       | 0.00 m                  | 0.00 m                               | 0.00 m         | 0.00 m      |
| Total Refrigerant Charge Amount              | Amount                  | Description                          |                |             |
| Refrigerant (R410A)                          | 34.500 kg               | Refrigerant amount (from factory)    |                |             |
| Outdoor Unit                                 | 12.700 kg               | Amount needed for piping at the site |                |             |
| Additional Refrigerant                       | <b>TOTAL: 47.200 kg</b> |                                      |                |             |
| Outdoor Design Temperature                   | Mode                    | Description                          | Temperature    |             |
| Cooling                                      | Outdoor Unit            | Dry bulb Temperature                 | 35.0 °C        |             |
| Heating                                      | Outdoor Unit            | Wet bulb Temperature                 | 8.0 °C         |             |
| Electronic Information (Outdoor Units)       | Property                | Value                                | Description    |             |
| MOCP(A)                                      | 125                     | Maximum Overcurrent Protection       |                |             |
| MCA(A)                                       | 107.4                   | Minimum Circuit Amps                 |                |             |
| Protection Device Size(A)                    |                         |                                      |                |             |
| Wire(cable size(mm <sup>2</sup> ) or AWG(#)) |                         |                                      |                |             |
| Electronic Information (Indoor Units)        | Property                | Value                                | Description    |             |
| Total MCA(A)                                 | 16.35                   |                                      |                |             |

Project Name: New Project1  
 Prepared By: \_\_\_\_\_ Revision: \_\_\_\_\_ Version: 1.2.10  
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## 7. Output

### Excel output:

The Excel output will create an Excel file with all the data regarding the project. It will create the same output as the Print & PDF, but it also includes the Setting file:



# 7. Output

## Setting File:

The Setting File created through the Excel output looks like this:

| Building Name |              | New Project 2                       |                        |        |                 |              |                     |               |                        |                         |            | IP Address  |           | 192.168.2.80                |                              |  |   |  |  |
|---------------|--------------|-------------------------------------|------------------------|--------|-----------------|--------------|---------------------|---------------|------------------------|-------------------------|------------|-------------|-----------|-----------------------------|------------------------------|--|---|--|--|
| No            | Outdoor Name | Outdoor Unit Combination Model Name | Indoor Unit Model Name | I/F No | Central Address | Line Address | Indoor Unit Address | Group Address | Parent Indoor Unit No. | R.C.group / Indoor Name | Floor Name | Tenant Name | Area Name | Digital I/O Relay Interface |                              | Energy Monitoring Relay Interface      |   |  |  |
|               |              |                                     |                        |        |                 |              |                     |               |                        |                         |            |             |           | Key Input Address - Channel | Fire Alarm Address - Channel | Power Meter (Indoor) Address - Channel | Power Meter (Outdoor) Address - Channel |  |  |
| 1             |              | 38VT040S68HTEE                      | 40VU027S-4S-TEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 2             |              | 38VT040S68HTEE                      | 40VU027S-4S-TEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 3             |              | 38VT040S68HTEE                      | 40VU027S-4S-TEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 4             |              | 38VT040S68HTEE                      | 40VU027S-4S-TEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 5             |              | 38VT040S68HTEE                      | 40VU027S-4S-TEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 6             |              | 38VT040S68HTEE                      | 40VU027S-4S-TEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 7             |              | 38VT040S68HTEE                      | 40VU027S-4S-TEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 8             |              | 38VT040S68HTEE                      | 40VU027S-4S-TEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 9             |              | 38VT040S68HTEE                      | 40VU027S-4S-TEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 10            |              | 38VT040S68HTEE                      | 40VU027S-4S-TEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 11            |              | 38VT040S68HTEE                      | 40VU027S-4S-TEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 12            |              | 38VT040S68HTEE                      | 40VU027S-4S-TEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 13            |              | 38VT040S68HTEE                      | 40VU027S-4S-TEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 14            |              | 38VT040S68HTEE                      | 40VU027S-4S-TEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 15            |              | 38VT040S68HTEE                      | 40VU027S-4S-TEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 16            |              | 38VT040S68HTEE                      | 40VU027S-4S-TEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 17            |              | 38VT040S68HTEE                      | 40VU027S-4S-TEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 18            |              | 38VT040S68HTEE                      | 40VU027S-4S-TEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 19            |              | 38VT040S68HTEE                      | 40VU027S-4S-TEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 20            |              | 38VT022168HTEE                      | 40VU0122-2S-JEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 21            |              | 38VT022168HTEE                      | 40VU0122-2S-JEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 22            |              | 38VT022168HTEE                      | 40VU0122-2S-JEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 23            |              | 38VT022168HTEE                      | 40VU0122-2S-JEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 24            |              | 38VT022168HTEE                      | 40VU0182-2S-JEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 25            |              | 38VT022168HTEE                      | 40VU0182-2S-JEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 26            |              | 38VT022168HTEE                      | 40VU0182-2S-JEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 27            |              | 38VT022168HTEE                      | 40VU0242-2S-JEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 28            |              | 38VT022168HTEE                      | 40VU0242-2S-JEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 29            |              | 38VT022168HTEE                      | 40VU0242-2S-JEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 30            |              | 38VT022168HTEE                      | 40VU0242-2S-JEE        | 0      |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 31            |              |                                     |                        |        |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 32            |              |                                     |                        |        |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 33            |              |                                     |                        |        |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |
| 34            |              |                                     |                        |        |                 |              |                     |               |                        |                         |            |             |           |                             |                              |  |   |  |  |

**Import it to the Controls using the Setting File software.**

**Separate software, download it from the portal**

## 7. Output

### CAD output:

Create the design schematic or diagram on a CAD file using the CAD output:

Create CAD outputs for one system or all the project

The screenshot shows the 'AutoCAD Export' dialog box with the following configuration:

- Step 1 - Select which system to export:**  This System(All floors),  Entire Project
- System Selection Table:**

| System Name | System Type                               |
|-------------|---|
| System 1    | Super Modular Multi System (SMMS-e)       |
| System 2    | Super Modular Multi System (SMMS-e)       |
| System 3    | Super Modular Multi System (SMMS-e)       |
| System 4    | Super Heat Recovery Multi System (SHRM-e) |
| System 5    | Super Modular Multi System (SMMS-e)       |
| System 6    | Super Modular Multi System (SMMS-e)       |
| System 7    | Super Modular Multi System (SMMS-e)       |

- Step 2 - Select which drawing to export:**  Piping,  Wiring,  Piping + Wiring,  Schematic
- Step 3 - Select export location/file names:**
  - Save to folder: C:\Users\sarasolaal\Documents
  - Filename Prefix: New Project1
  - Type of export data: DWG (AutoCAD AC27)
- Filenames Table:**

| Filenames                        | System   | Floor | Page No | Done                     |
|----------------------------------|----------|-------|---------|--------------------------|
| New Project1_System 3_Piping.dwg | System 3 |       | 1       | <input type="checkbox"/> |

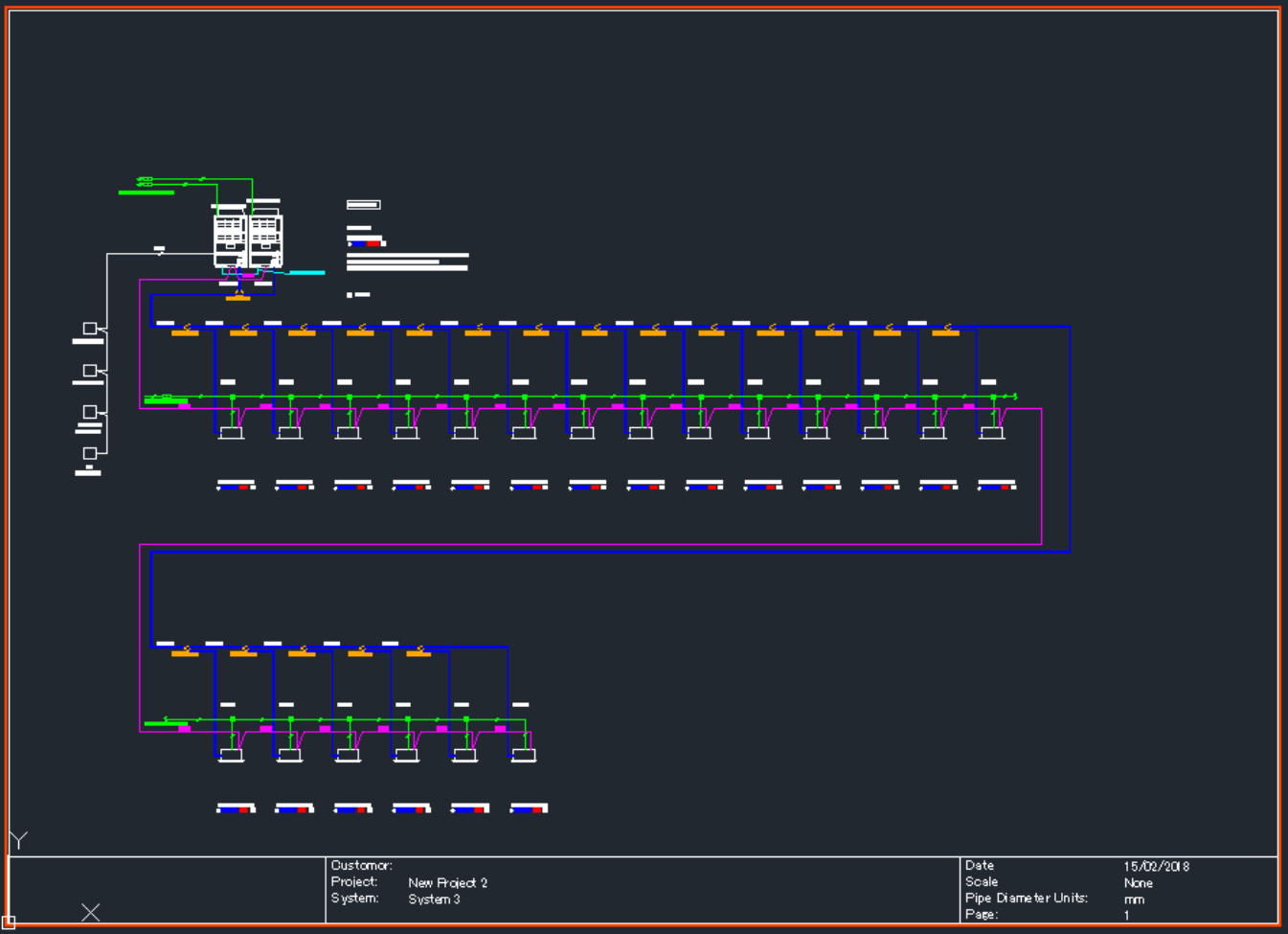
- Step 4 - Generate DWG exports:**

Select the desired outputs and a destination folder

# 7. Output

## CAD output:

This is how the Piping and wiring CAD looks like:







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