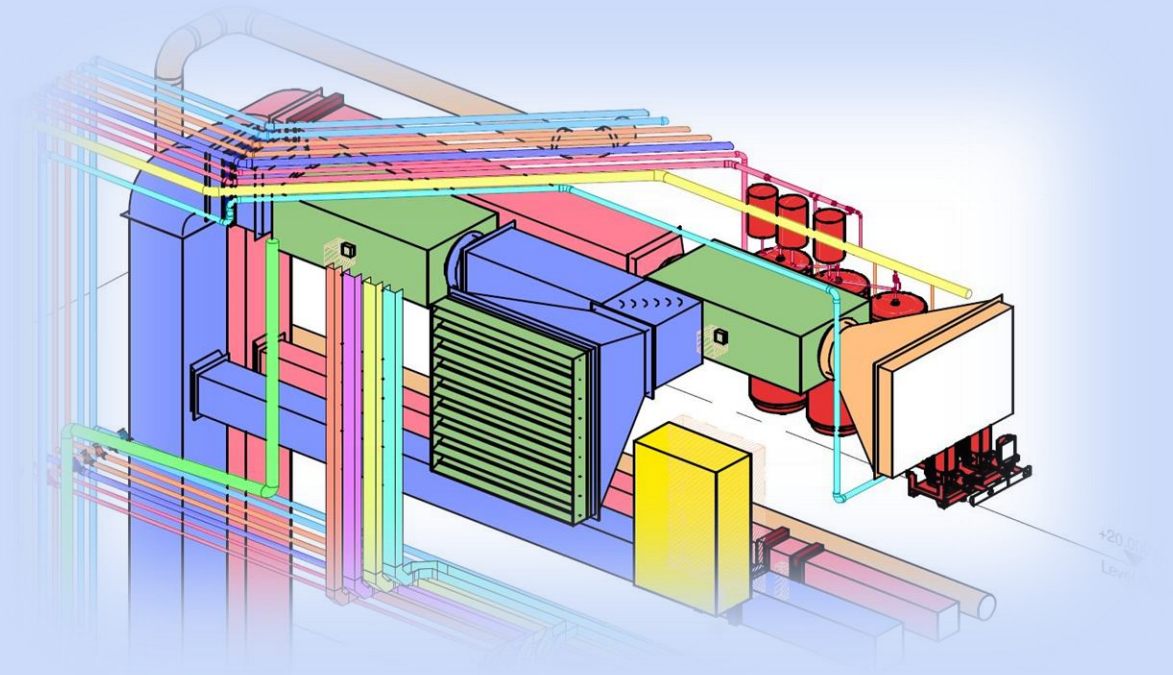




Society of Digital Engineering



Symbols



Presenters:

Carl Collins

– Head of Digital Engineering, CIBSE

Rob Harmer

– Technical Manager, MagiCAD

Agenda:

- The need for standard symbols
- The approach taken
- System colours and abbreviations
- Electrical symbols
- Mechanical symbols
- Future developments

The team



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The need for standard symbols:

- To remove uncertainty in reading drawings
- To speed up production and use of deliverables
- Lessen the possibility of ordering the wrong product
- Decrease learning curve for new staff
- Enhance understanding of what symbols mean
- Facilitate creation of new symbols through systematic approach.

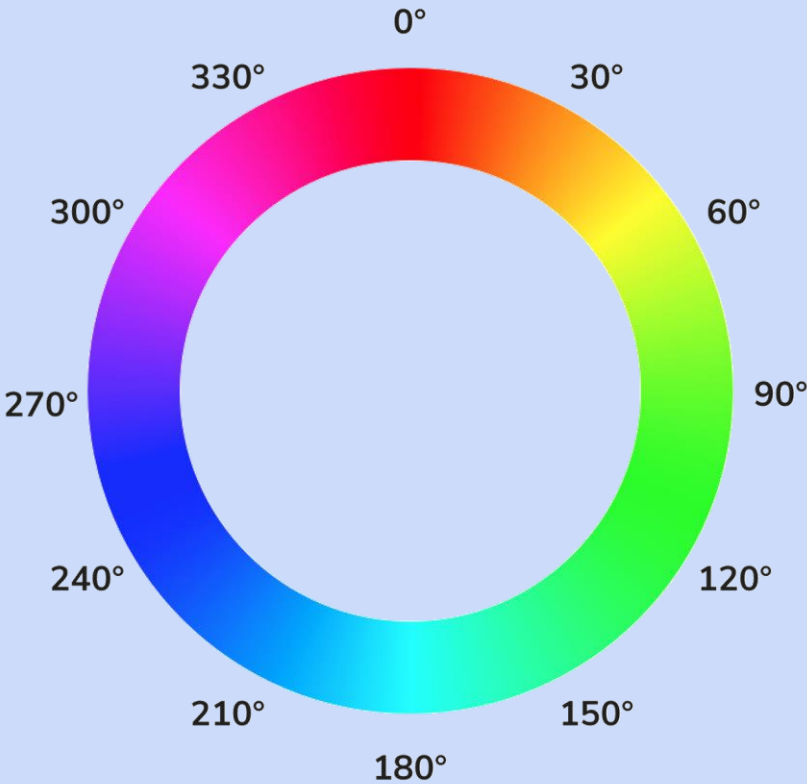
The approach taken :

- Create symbols systematically, across all MEP disciplines
- Make symbols using modular parts
- Understand what is available now and how good that is, adopting as much as possible
- Understand how people “read” symbols
- Understand how symbols will be used.

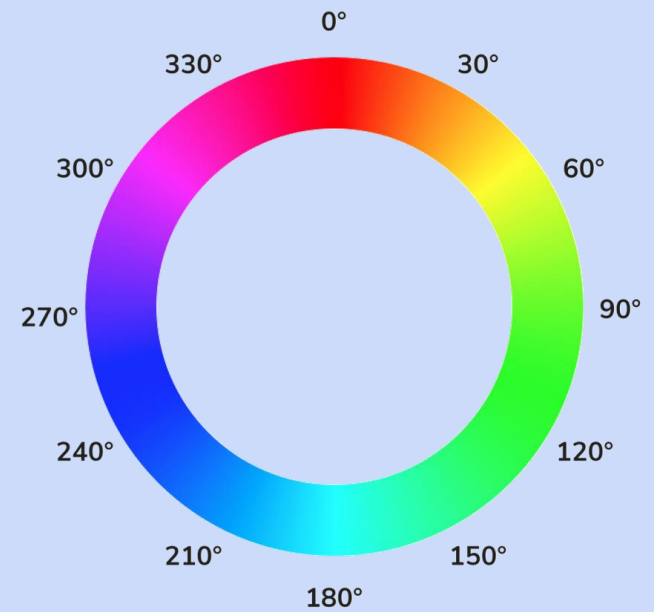
System colours and abbreviations :

- Abbreviations and definitions of common building services systems
- Colouration of Pipe, Duct and Containment systems
- Methods of showing systems using drawing and modelling techniques.

System colours and abbreviations :



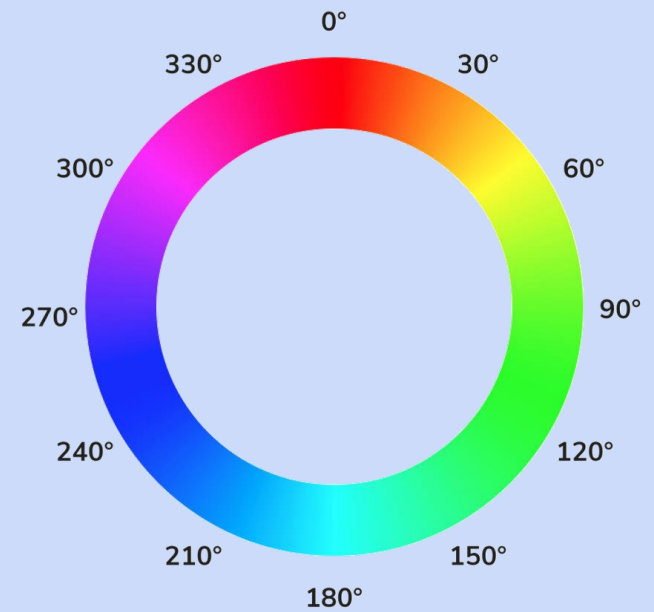
System colours and abbreviations :



Line colours:

Aspect	Factor	Example 1	Example 2
Hue	System	LTHW - 20°	ChW - 200°
Saturation	Related system	LTHW_F_Rad – 80%	LTHW_F_AHU – 60%
Lightness	Subsystem	LTHW_F – 30%	LTHW_R – 45%

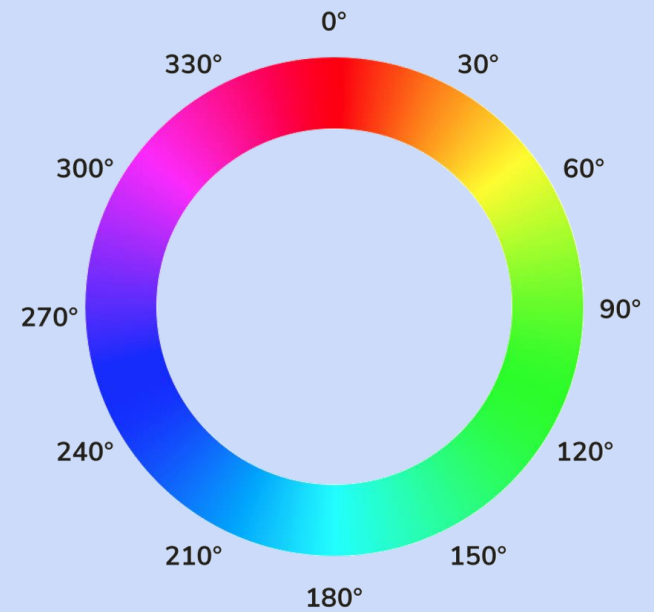
System colours and abbreviations :







Fill colours:

Aspect	Factor	Example 1	Example 2
Hue	System	LTHW - 20°	ChW - 200°
Saturation	Related system	LTHW_F_Rad – 80%	LTHW_F_AHU – 60%
Lightness	Subsystem	LTHW_F – 75%	LTHW_R – 75%

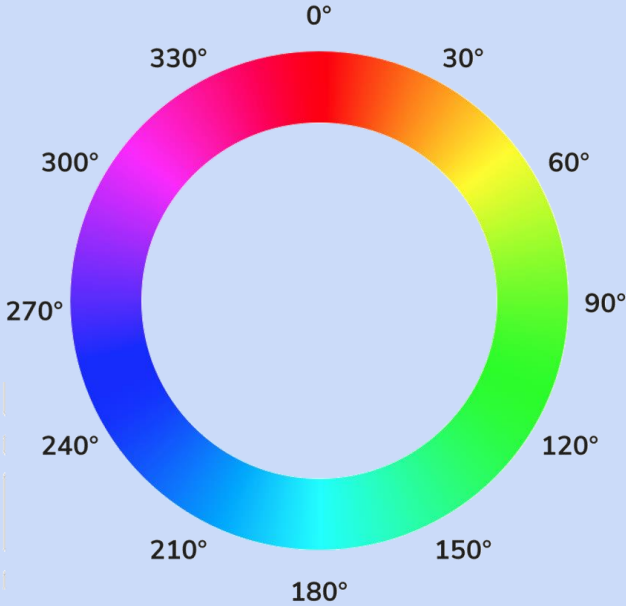
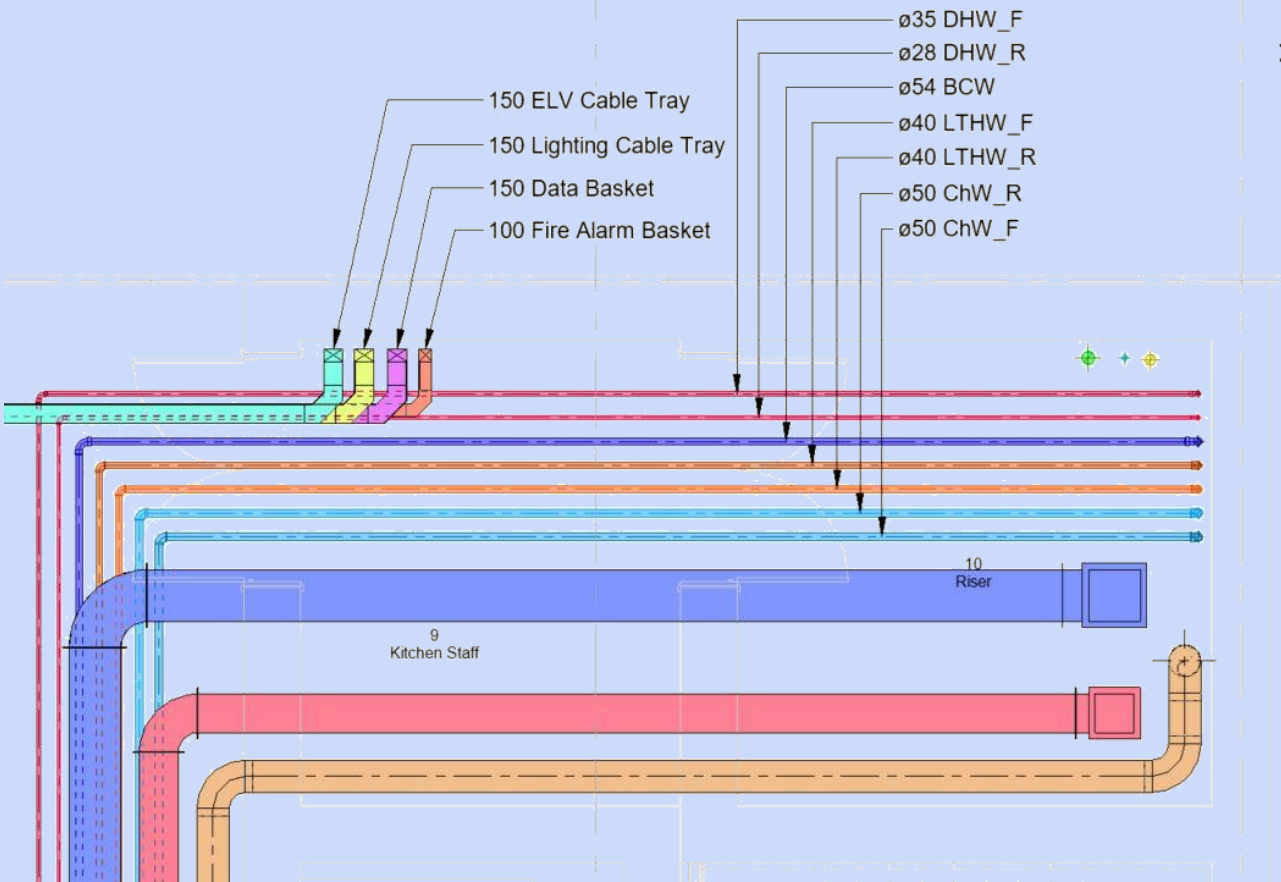
System colours and abbreviations :



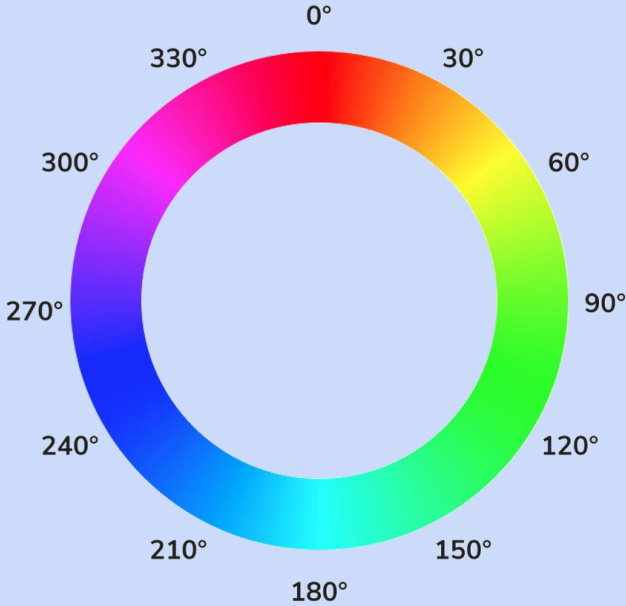
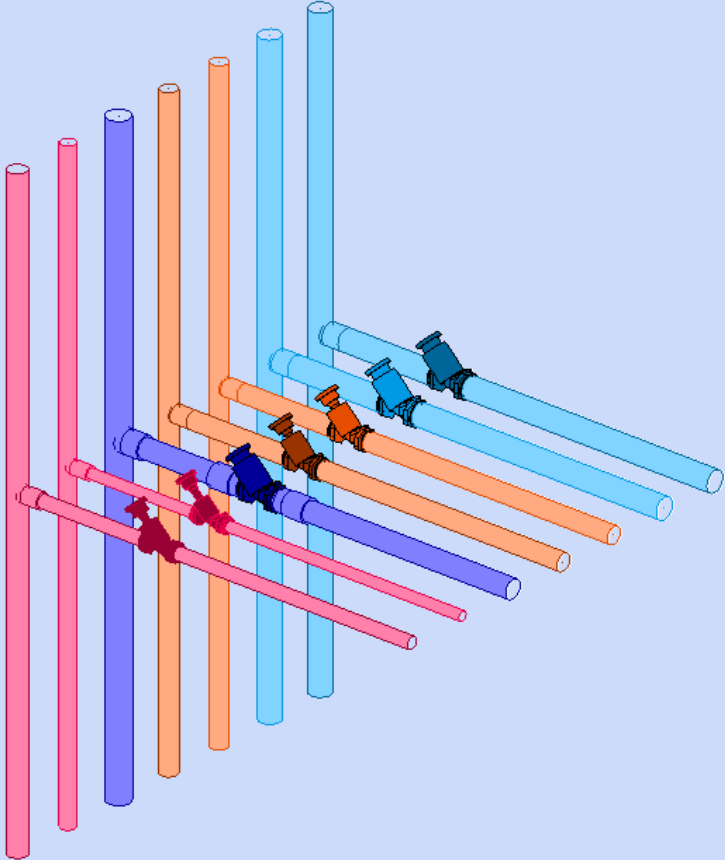
Line and Fill colours:

Service	Colour	HSL	RGB	HEX	Colour	HSL	RGB	HEX
Low Temperature Hot Water Flow		20, 100%, 30%	153, 51, 0	#993300		20, 100%, 75%	255, 170, 128	#ffaa80
Low Temperature Hot Water Return		20, 100%, 45%	230, 77, 0	#e64d00		20, 100%, 75%	255, 170, 128	#ffaa80

System colours and abbreviations :



System colours and abbreviations :



System colours and abbreviations :

Abbreviations:

As “Doctor” is abbreviated to “Dr”

So “Chilled” is abbreviated to “Ch”

Hence, “Chilled Water” is abbreviated to “ChW”

System colours and abbreviations :

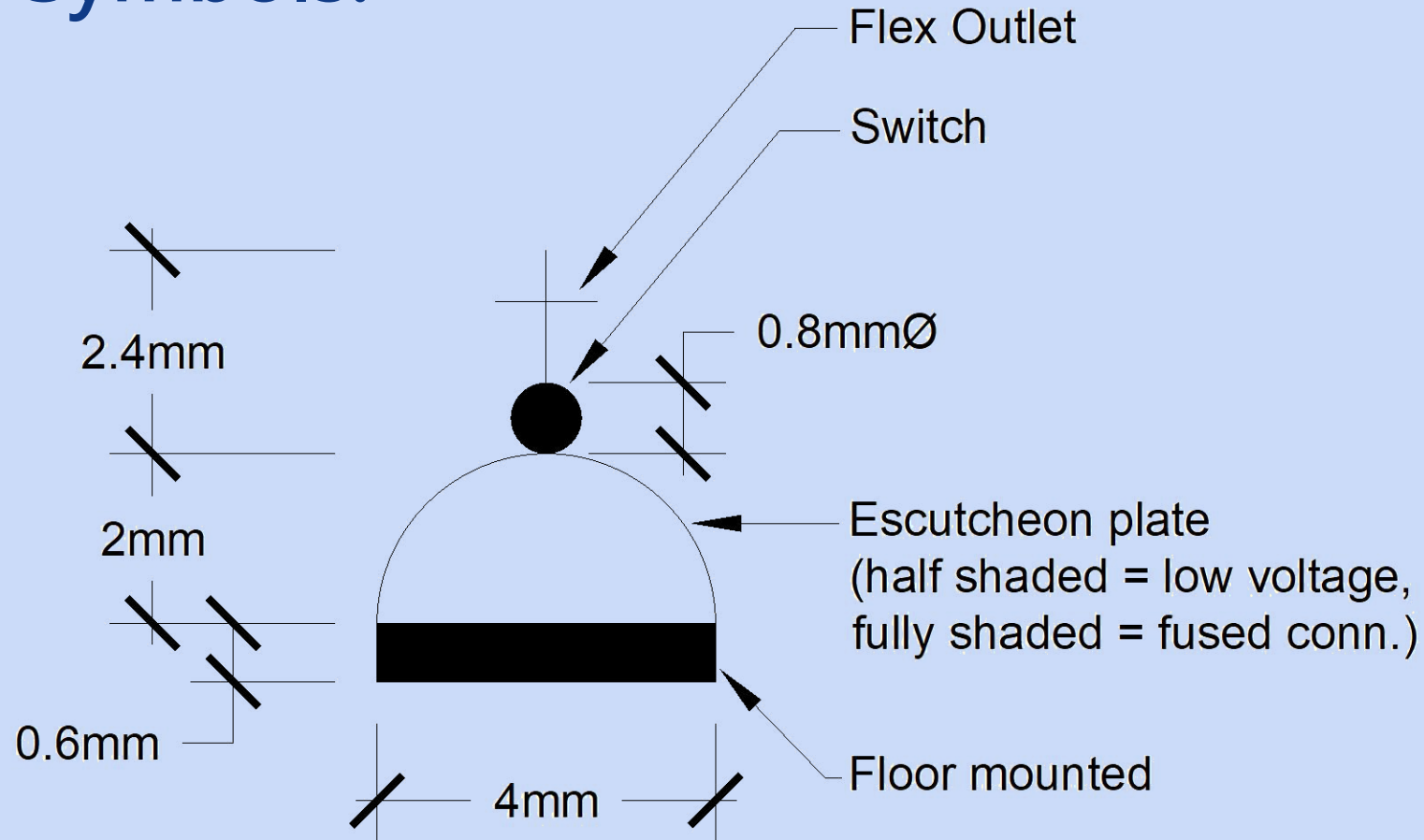
Abbreviations:

Underscore is the only character reserved for delimitation

Hence, to separate system naming parts, “_” is used

e.g. LTHW_F_AHU

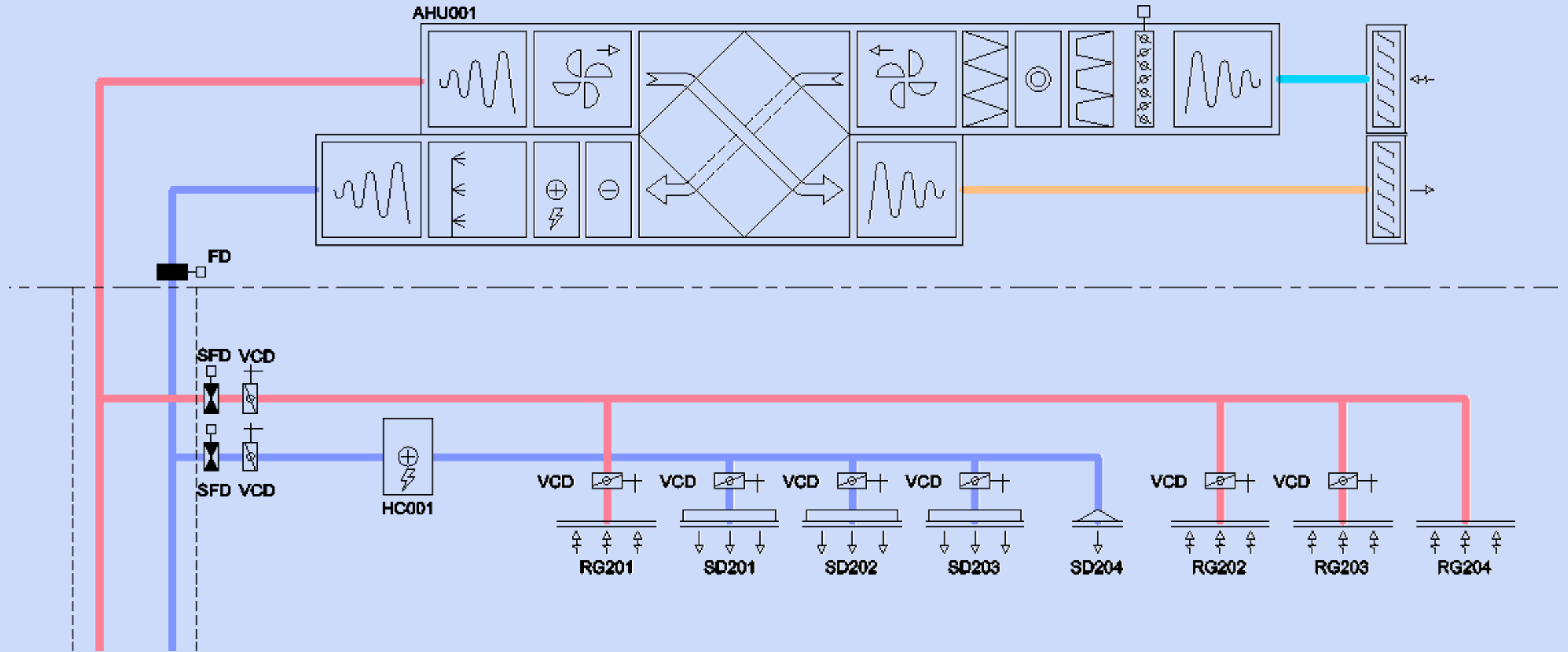
Electrical Symbols:



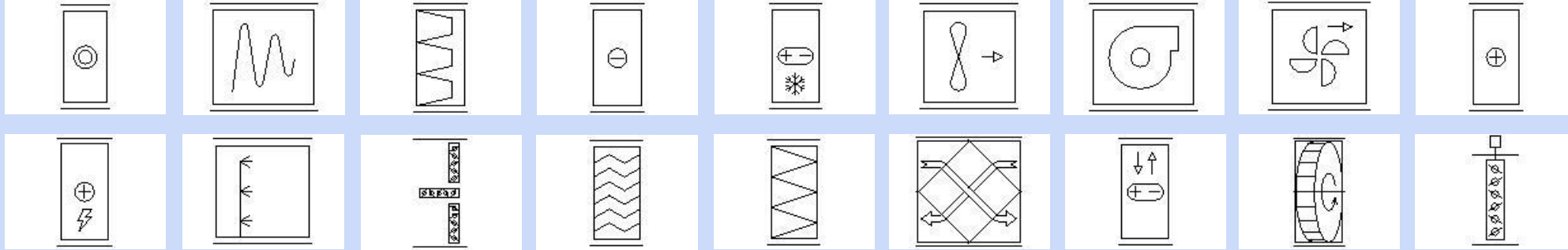
Electrical Symbols:

Over to Rob to demonstrate Electrical Symbol usage in MagiCAD.

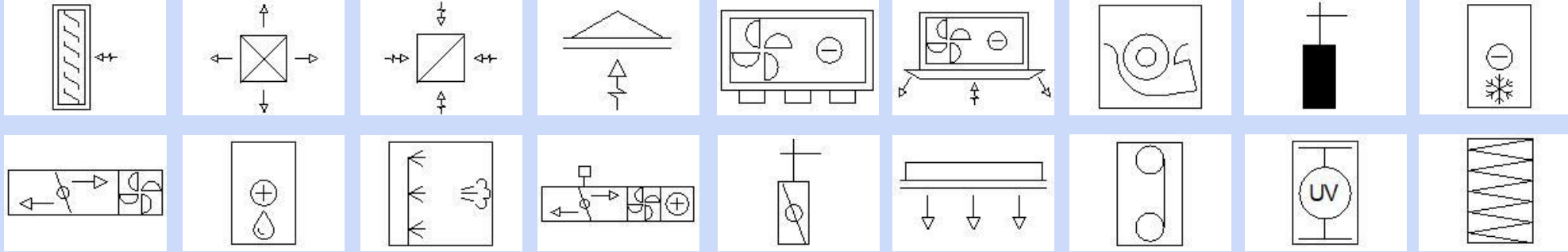
Mechanical Symbols:



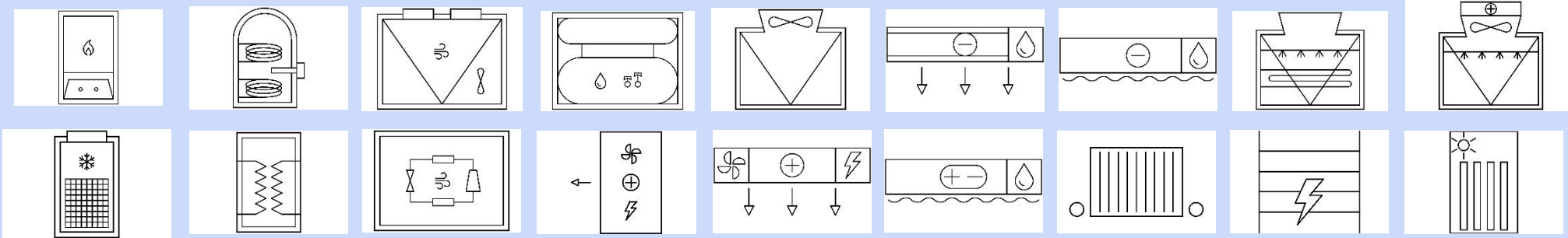
Mechanical Symbols - AHU:



Mechanical Symbols - Ductline:



Mechanical Symbols – Heating and Cooling:



Future Developments:

- Pipeline symbols
- Public Health symbols
- Comms and Security
- Public Address
- Voice Alarm
- Fire systems

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