



FAST AS FLUID

Specification sheets

March 2023



Preference Settings

- Automatic loading of preferences from the DWG file.
(When opening a DWG file, the relevant preference file automatically loads up. It includes the latest modifications).
- Working unit.
- Drafting scale.
- Layer management:
 - By specialty, by geographical location and by single-line or double-line drawing mode (very flexible).
 - By type of graphic entity (network, materials...).
 - Several types of layer combinations (time saving).
 - Graphic variables for representation of:
 - The appearance of ducts.
 - Texts, dimensions, arrows, conduits intersections.
 - A range of hatching styles to symbolise coverings (thermo isolation, flocking).

Calculation variables

- Conversion of rectangular/circular sections, coefficient of roughness of materials.
- Flow units, pressure drops units.
- Sets the TP scales and handles switching between model space and paper space automatically.
(Can be switched on or off.)

Management of drawing backgrounds

- Colour of entities.
- Colour of layers.
- Resetting the Z coordinate.
- Option to isolate texts, hatches, dimensions...
- Text fonts handling.
- Option for renaming layers for intelligent sorting.
- Management of the unit system (Metric/Imperial).
- Line thickness and TP scale management...

Drafting

- Point to point air duct routing in single-line or double-line mode.
- Detailed drawings of all the accessories according to their configuration.
- Automatic insertion of components.
- Library of standard components.
- Customization of air conditioning terminals (fan coil, cassette, air handling unit...).
- Drawing of grids and registers.
- Automatic adjustment of grids and diffusers onto suspended ceilings.

- Registers library to draft grids and plenums.
- Automatic drawing of register connections onto main sewer pipes.
- Detailed drawing of flexible conduits with customizable curve radius.

Quick Modification Tools

- Changing an object (turning an elbow into a slope, changing the ND of an already drawn duct, changing a topside connection into an underside connection...).
- Moving an object (when drawing a reduction the conduits adjust and adjacent elbows follow automatically...).
- Deleting an object (the conduit 'closes' automatically on deleting a valve or a connection...).

Calculation

Sizing and Altimetry

- Calculation of a duct section according to the airflow (or power and Delta T), in relation with speed constraints or pressure drops limitations.
- Calculation of the coefficient of friction (j) of a duct section.
- Calculation of a network size according to its representation.
- Calculation of levels while routing on change of duct section.



Other Features

- Show crossed networks in double-line or single-line (by hiding or 'cutting' with an offset of one duct in relation to another, with only 2 mouse clicks).
- Automatic rebuild of sectioned conduits.
- Manipulation of layers (freeze, transfer, lock, etc...).
- Dimensioning settings (unit, number of decimals, arrows, etc...).
- Simpler dimensioning operations than with AUTOCAD.
- Automatic update of dimensions on changing the settings.
- Proportionality factor.
- Thickness management.
- Type of lines containing letters.

Texts

- Single-line or multi-line texts.
- Automatic update of the number of lines.
- 'Click to text' function: when clicking onto a network, some of the related technical data automatically pre-populate the text field (such as the air duct portion).
- Automatic insertion of prefixes and suffixes in the texts.
- Automatic section formatting according to the material specifications.

- Automatic insertion of leader lines, frames, arrows, points, etc.
- Automatic adjustment of the leader line and frame when the text is modified.
- Choice of the character font and of its size.
- Automatic scaling.

Arrows

- Automatic drawing and positioning of flow direction arrows.
- Automatic adjustment of arrow directions.

Quantities

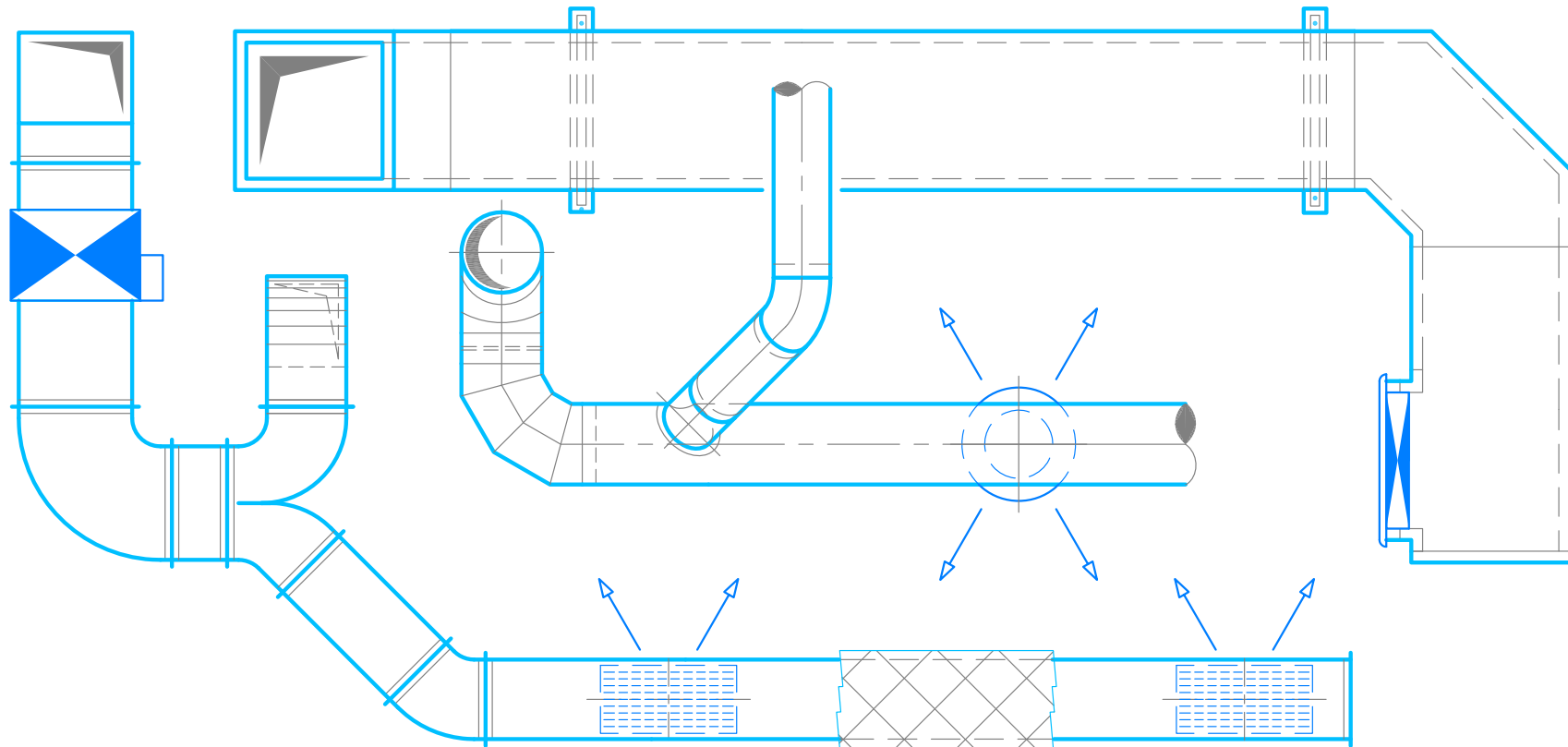
- Definition of plan zones for the network and material bills creation.
- Immediate and automatic extraction of conduits quantities within the predefined zones.
- Immediate and automatic extraction of equipment quantities within the predefined zones.
- Material bills exportation to AUTOCAD or EXCEL.
- Automatic insertion and management of assigned blocks.

Openings

- Drawing of openings in slabs or in walls using the conduits' drawing.
- Drawing of openings in slabs or in walls without using the conduits' drawing.
- Choose the shape of the openings.
- Automatic dimensioning of openings.
- Automatic location and tagging of markers.
- Update of an opening drawing on changing its assigned tag.
- Extraction of openings list and export to AUTOCAD or EXCEL.

Page Layout

- Automatic drawing page layout with creation of presentations.
- Automatic insertion of formats and title blocks.
- Create detailed views.
- Calculate the scales and update the scale of views.
- Automatic insertion in the margin of the file name, of its path and of its associated XREF.





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 - By type of graphic entity (network, materials...).
 - Several types of layer combinations (time saving)
 - Graphic variables for representation of:
 - The appearance of ducts.
 - Texts, dimensions, arrows, conduits intersections.
 - A range of hatching styles to symbolise coverings (thermo isolation, flocking).
- Calculation variables:
 - › Conversion of rectangular/circular sections, coefficient of roughness of materials.
 - › Flow units, pressure drops units.
- Sets the TP scales and handles switching between model space and paper space automatically.
(Can be switched on or off.)

Management of drawing backgrounds

- Colour of entities.
- Colour of layers.
- Resetting the Z coordinate.
- Option to isolate texts, hatches, dimensions...
- Text fonts handling.
- Option for renaming layers for intelligent sorting.
- Management of the unit system (Metrique/Imperial).
- Line thickness and TP scale management.
- ...

Drafting

- Point to point pipe routing in single-line or double-line mode according to the material specifications.
- Standard specifications for heating and air conditioning.
- Five specifications specially developed for steel, copper and PVC pipework.
- 19 pipework specifications available for filling according to your needs.
- Point to point single-line routing of a set of pipes (up to 6 pipes).

- Cross-sectional drawing and calculation of the distance between the centres within the set of pipes.
- Automatic insertion of the list of conduits constituting a set of pipes.
- Detailed drawing of all the accessories according to their configuration.
- Insertion of water fittings in line.
- Insertion of water fittings onto drafted pipes.
- Library of standard components.
- Drawings of the different types of heaters (panel-type radiators, multiple elements radiators...).
- Symbolic or realistic representation of the heaters.
- Insertion of assigned tags (descriptive tags) to the heaters.

Quick Modification Tools

- Changing an object (turning an elbow into a slope, changing the ND of an already drawn duct, changing a topside connection into an underside connection...).
- Moving an object (when drawing a reduction the conduits adjust and adjacent elbows follow automatically...).
- Deleting an object (the conduit 'closes' automatically on deleting a valve or a connection...).



Other Features

- Show crossed networks in double-line or single-line (by hiding or 'cutting' with an offset of one duct in relation to another, with only 2 mouse clicks).
- Automatic rebuild of sectioned conduits.
- Manipulation of layers (freeze, transfer, lock, etc...).
- Dimensioning settings (unit, number of decimals, arrows, etc...).
- Simpler dimensioning operations than with AUTOCAD.
- Automatic update of dimensions on changing the settings.
- Proportionality factor.
- Thickness management.
- Type of lines containing letters.

Texts

- Single-line or multi-line texts.
- Automatic update of the number of lines.
- 'Click to text' function: when clicking onto a network, some of the related technical data automatically pre-populate the text field (such as the air duct portion).
- Automatic insertion of prefixes and suffixes in the texts.
- Automatic section formatting according to the material specifications.
- Automatic insertion of leader lines, frames, arrows, points, etc.

- Automatic adjustment of the leader line and frame when the text is modified.
- Choice of the character font and of its size.
- Automatic scaling.

Arrows

- Automatic drawing and positioning of flow direction arrows.
- Automatic adjustment of arrow directions.

Quantities

- Definition of plan zones for the network and material bills creation.
- Immediate and automatic extraction of conduits quantities within the predefined zones.
- Immediate and automatic extraction of equipment quantities within the predefined zones.
- Material bills exportation to AUTOCAD or EXCEL.
- Automatic insertion and management of assigned blocks.

Openings

- Drawing of openings in slabs or in walls using the conduits' drawing.

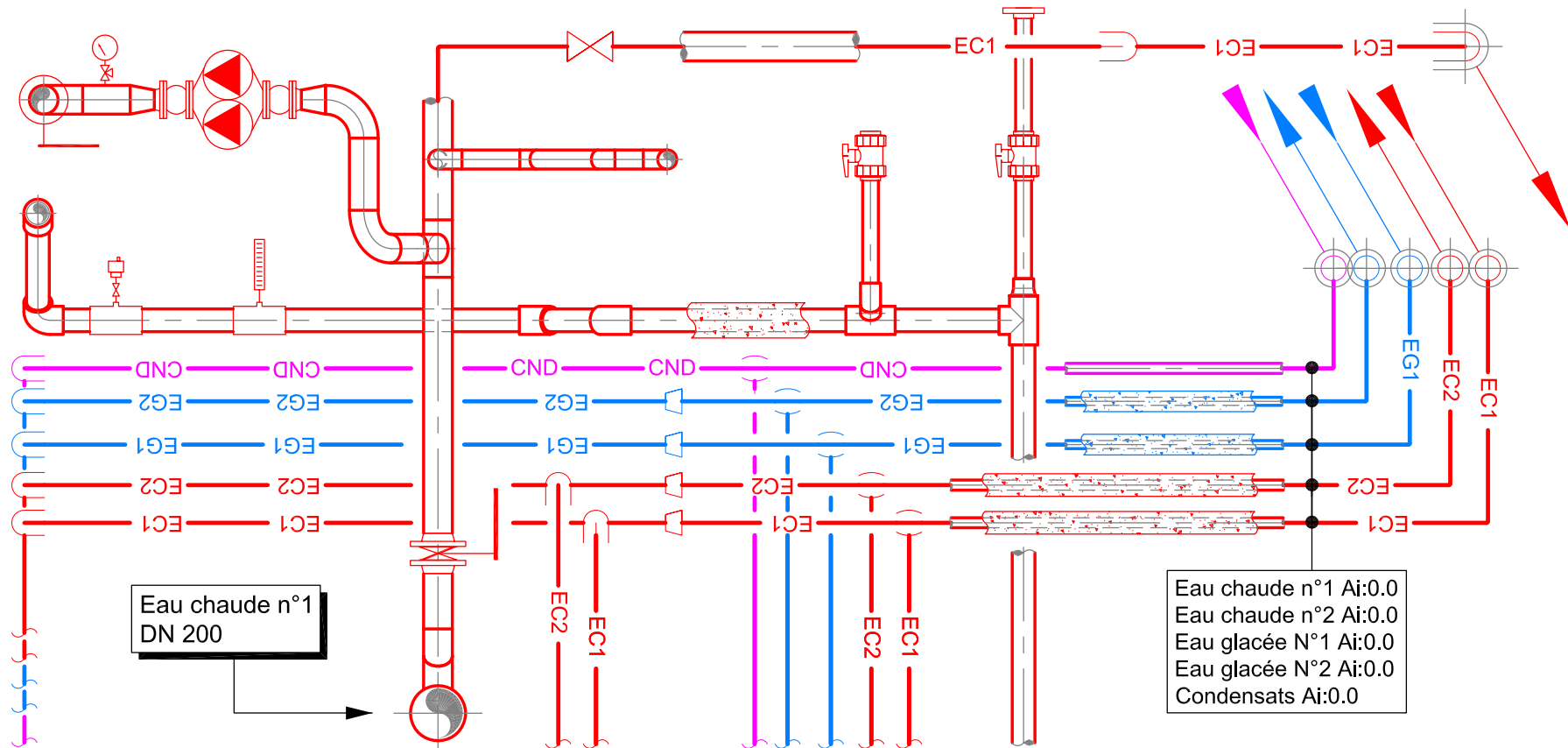
- Drawing of openings in slabs or in walls without using the conduits' drawing.
- Choose the shape of the openings.
- Automatic dimensioning of openings.
- Automatic location and tagging of markers.
- Update of an opening drawing on changing its assigned tag.
- Extraction of openings list and export to AUTOCAD or EXCEL.

Page Layout

- Automatic drawing page layout with creation of presentations.
- Automatic insertion of formats and title blocks.
- Create detailed views.
- Calculate the scales and update the scale of views.
- Automatic insertion in the margin of the file name, of its path and of its associated XREF.

Calculation Sizing and Altimetry

- Calculation of a duct section according to the airflow (or power and Delta T), in relation with speed constraints or pressure drops limitations.
- Calculation of the coefficient of friction (j) of a duct section.
- Calculation of a network size according to its representation.
- Calculation of levels while routing on change of duct section.





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 - By type of graphic entity (network, materials...).
 - Several types of layer combinations (time saving).
 - Graphic variables for representation of:
 - The appearance of ducts.
 - Texts, dimensions, arrows, conduits intersections.
 - A range of hatching styles to symbolise coverings (thermo isolation, flocking).
 - Calculation variables:
 - › Conversion of rectangular/circular sections, coefficient of roughness of materials,
 - › Flow units.
- Sets the TP scales and handles switching between model space and paper space automatically.
(Can be switched on or off.)

Management of drawing backgrounds

- colour of entities
- colour of layers
- Resetting the Z coordinate
- Option to isolate texts, hatches, dimensions...
- Text fonts handling
- Option for renaming layers for intelligent sorting
- Management of the unit system (Metrique/Imperial)
- Line thickness and TP scale management...

Calculations

- Sizing and Altimetry
- Calculation of a duct section according to the flow (or power and Delta T), in relation with speed constraints or pressure drops limitations.
- Calculation of the coefficient of friction (j) of a duct section.
- Calculation of a network size according to its representation.
- Quick calculation of added sanitary supply base flows.
- Calculation of levels in drain networks which are already drafted.

Drafting

- Point to point supply routing in single-line mode according to the material specifications.
- Optional insertion of 45° elbows.
- Create inspection covers more easily.
- Point to point drain routing in double-line or single-line mode according to the material.
- Link with AutoTUBE's double-line mode with sharing of common parameters.
- Library of water fittings.
- Point to point routing of hydro-cable networks.
- Detailed drawing of all the accessories according to their configuration.
- Library of customizable kitchen and bathroom facilities.
- Library of standard components.

Quick Modification Tools

- Changing an object (turning an elbow into a slope, changing the ND of an already drawn duct, changing a topside connection into an underside connection...).
- Moving an object (when drawing a reduction the conduits adjust and adjacent elbows follow automatically...).
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- Automatic adjustment of the leader line and frame when the text is modified.
- Choice of the character font and of its size.
- Automatic scaling.
- Automatic calculation of levels.

Arrows

- Automatic drawing and positioning of flow direction arrows.
- Automatic adjustment of arrow directions.
- Representation of slopes.
- Layer management specific to plumbing arrows.

Quantities

- Definition of plan zones for the network and material bills creation.
- Immediate and automatic extraction of conduits quantities within a predefined zone.
- Immediate and automatic extraction of equipment within a predefined zone.

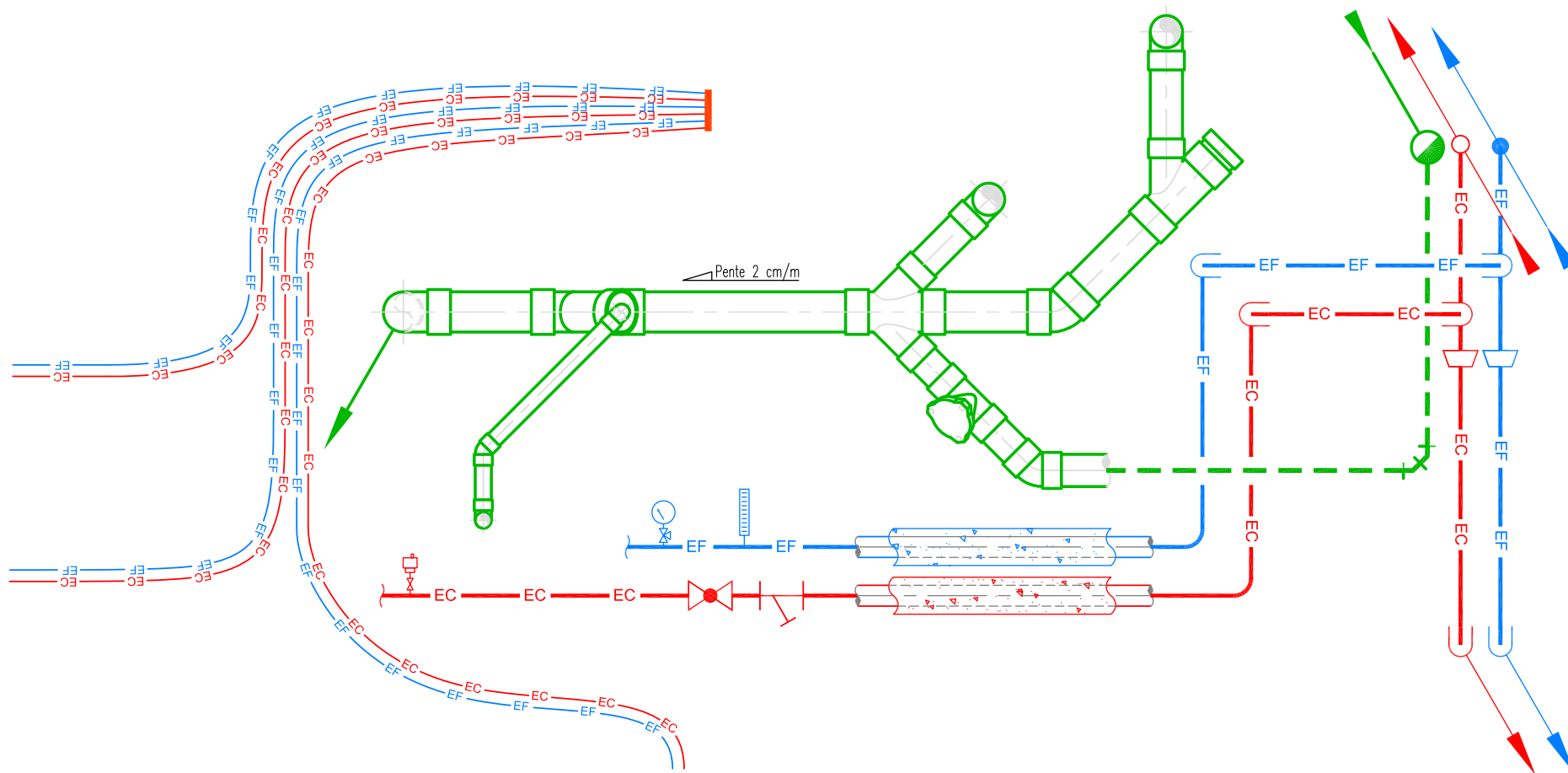
- Material bills exportation to AUTOCAD or EXCEL.
- Automatic insertion and management of assigned blocks.

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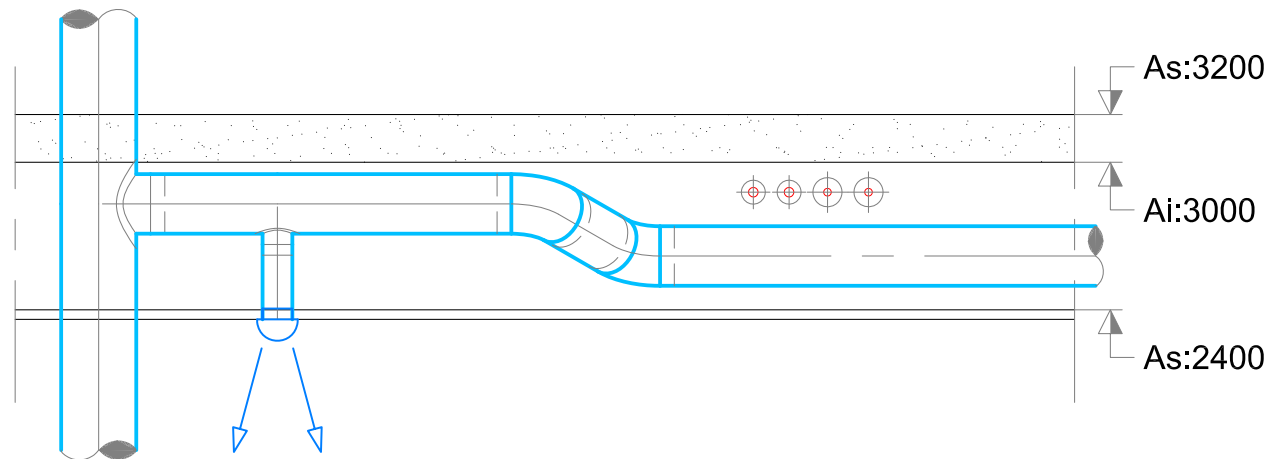




Features

- Insert cross section markers automatically.
- Generate accurate drawing backgrounds using a plan view.
- Technical data entry module in the plan view.
- Technical data erasing module.
- Cross section preview.
- Generate section drawings from a suitable angle automatically.
- Module to quickly modify the thickness and level of slabs, suspended ceilings and floors. Features
- Insert cross section markers automatically.
- Generate accurate drawing backgrounds using a plan view.
- Technical data entry module in the plan view.
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Coupe A





Compute pressure drops in a network

- Objects drafted with AUTOGAINE and/or AUTOTUBE already contain ample information embedded at the time of their creation.
- A specific tool lets you add missing information that might be needed for calculations (length of vertical ducts, flow, direction of flow).
- Select specific segments of the route for pressure drops calculation.
- Automatically locate each part and create a ready to print layout of a chosen network route.
- Excel spread sheet listing singular and linear pressure drops.
- Tables and calculation procedures taken from reference studies in the trade. (Ref.: MEMENTO of pressure drops by I.E IDEL'CIK, PORCHER air conditioning courses).

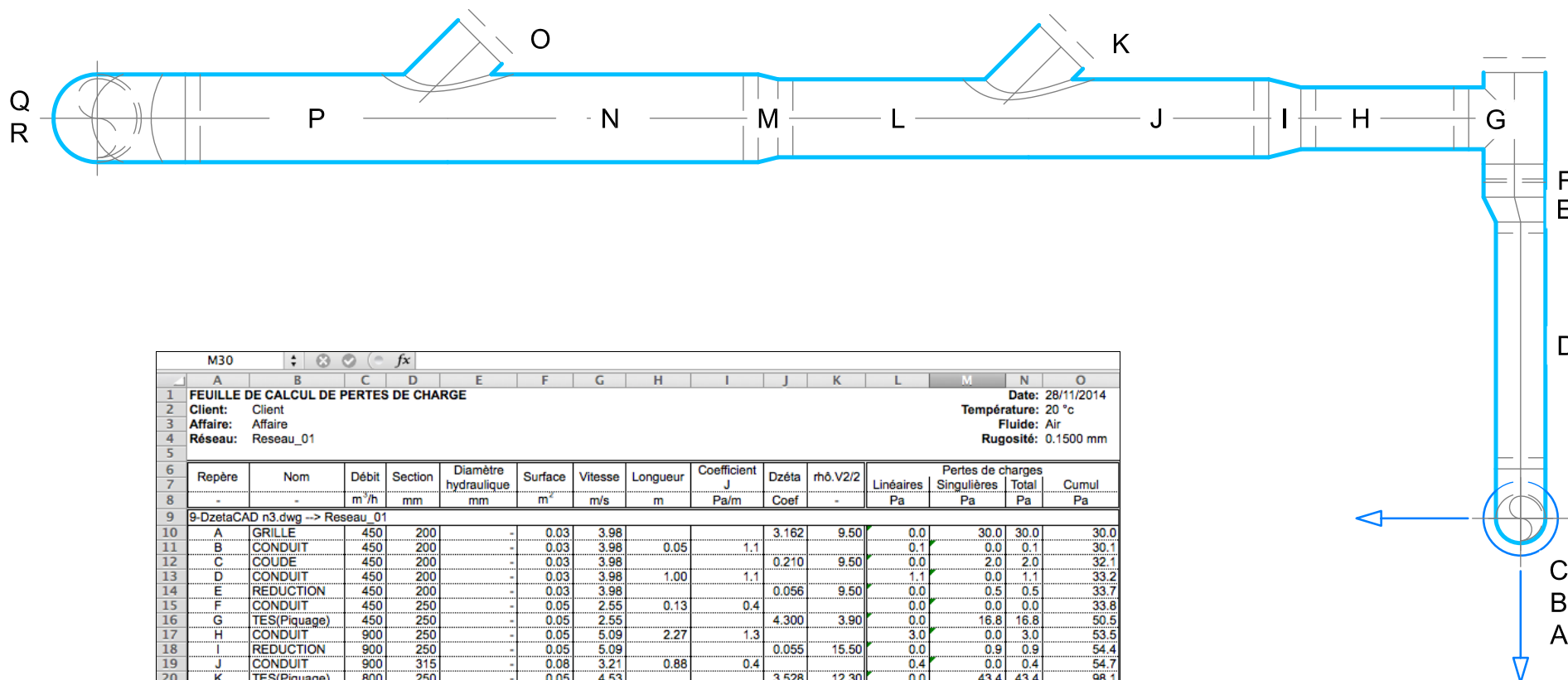
Compute friction factors using the COLEBROOK formula

Taking into account the following factors:

- Roughness coefficients of materials.
- Duct shapes.
- Altimetry and humidity for air calculation.
- Fluids temperature.

Calculation of DZETA coefficient

- Tables and calculation procedures taken from reference studies in the trade. (Ref.: MEMENTO of pressure drops by I.E IDEL'CIK, PORCHER air conditioning courses).
- Informs the user on the chosen calculation method.
- Takes into account the direction of flow in each part.
- Instant reading on the DZETA coefficient and pressure drop of fittings, directly into the drawing.
- Allows to force the DZETA coefficient for special parts.



M30														
FEUILLE DE CALCUL DE PERTES DE CHARGE														
Client: Client										Date: 28/11/2014				
Affaire: Affaire										Température: 20 °c				
Réseau: Réseau_01										Fluide: Air				
										Rugosité: 0.1500 mm				
Repère	Nom	Débit	Section	Diamètre hydraulique	Surface	Vitesse	Longueur	Coefficient J	Dzéta	ρ·V²/2	Linéaires	Pertes de charges Singulières	Total	Cumul
-	-	m³/h	mm	mm	m²	m/s	m	Pa/m	Coef	-	Pa	Pa	Pa	Pa
9-DzetaCAD n3.dwg -> Réseau_01														
A	GRILLE	450	200	-	0.03	3.98			3.162	9.50	0.0	30.0	30.0	30.0
B	CONDUIT	450	200	-	0.03	3.98	0.05	1.1			0.1	0.0	0.1	30.1
C	COUDE	450	200	-	0.03	3.98			0.210	9.50	0.0	2.0	2.0	32.1
D	CONDUIT	450	200	-	0.03	3.98	1.00	1.1			1.1	0.0	1.1	33.2
E	REDUCTION	450	200	-	0.03	3.98			0.056	9.50	0.0	0.5	0.5	33.7
F	CONDUIT	450	250	-	0.05	2.55	0.13	0.4			0.0	0.0	0.0	33.8
G	TES(Piquage)	450	250	-	0.05	2.55			4.300	3.90	0.0	16.8	16.8	50.5
H	CONDUIT	900	250	-	0.05	5.09	2.27	1.3			3.0	0.0	3.0	53.5
I	REDUCTION	900	250	-	0.05	5.09			0.055	15.50	0.0	0.9	0.9	54.4
J	CONDUIT	900	315	-	0.08	3.21	0.88	0.4			0.4	0.0	0.4	54.7
K	TES(Piquage)	800	250	-	0.05	4.53			3.528	12.30	0.0	43.4	43.4	98.1
L	CONDUIT	1,700	315	-	0.08	6.06	2.05	1.4			2.8	0.0	2.8	100.9
M	REDUCTION	1,700	315	-	0.08	6.06			0.042	22.00	0.0	0.9	0.9	101.9
N	CONDUIT	1,700	355	-	0.10	4.77	1.17	0.8			0.9	0.0	0.9	102.8
O	TES(Piquage)	800	250	-	0.05	4.53			4.119	12.30	0.0	50.7	50.7	153.4
P	CONDUIT	2,500	355	-	0.10	7.02	1.98	1.6			3.1	0.0	3.1	156.5
Q	COUDE	2,500	355	-	0.10	7.02			0.619	29.50	0.0	18.3	18.3	174.8
R	CONDUIT	2,500	355	-	0.10	7.02	0.50	1.6			0.8	0.0	0.8	175.6



Generate fluid networks in 3D from 2D plans that were drafted using AUTOGAINE, AUTOTUBE and AUTOSAN. AUTOBIM3D lets you export these networks to insert them into BIM models.

Introduction

AUTOBIM3D isn't a drafting package, rather it performs an analysis of 2D networks that were drafted with double line routing tools in AUTOFLUID.

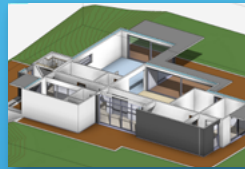
Characteristics

- Referencing and positioning tool
- Dedicated specification tool for water levels
- 3D network generation command
- Spacial navigation command
- View style settings
- 3D network visibility settings
- Managing created networks (Re-naming - Deleting - Merging)
- .DWG exporting functionality
- .IFC version 2.3, IFC2X3 TC1 format Coordination View V2.0. AUTOFLUID's .IFC library was developed by the CSTB.

VOS RÉSEAUX FLUIDE EN 3D DANS BIM, SANS EFFORT

AUTOBIM3D s'intègre à votre process habituel en 2D et optimise votre temps de production.

1
ETAPE



OUVERTURE DE LA MAQUETTE 3D



CRÉATION DES FONDS DE PLANS 2D
AVEC RVT-Connect

2
ETAPE

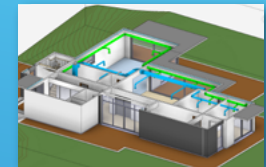


CRÉATION DU RÉSEAU EN 2D
AVEC AUTOFLUID
Découvrez toutes les fonctionnalités
sur www.autofluid.fr



CRÉATION AUTOMATIQUE DU RÉSEAU 3D
Renseignement des arases
Génération du réseau 3D
Export au format .IFC

3
ETAPE

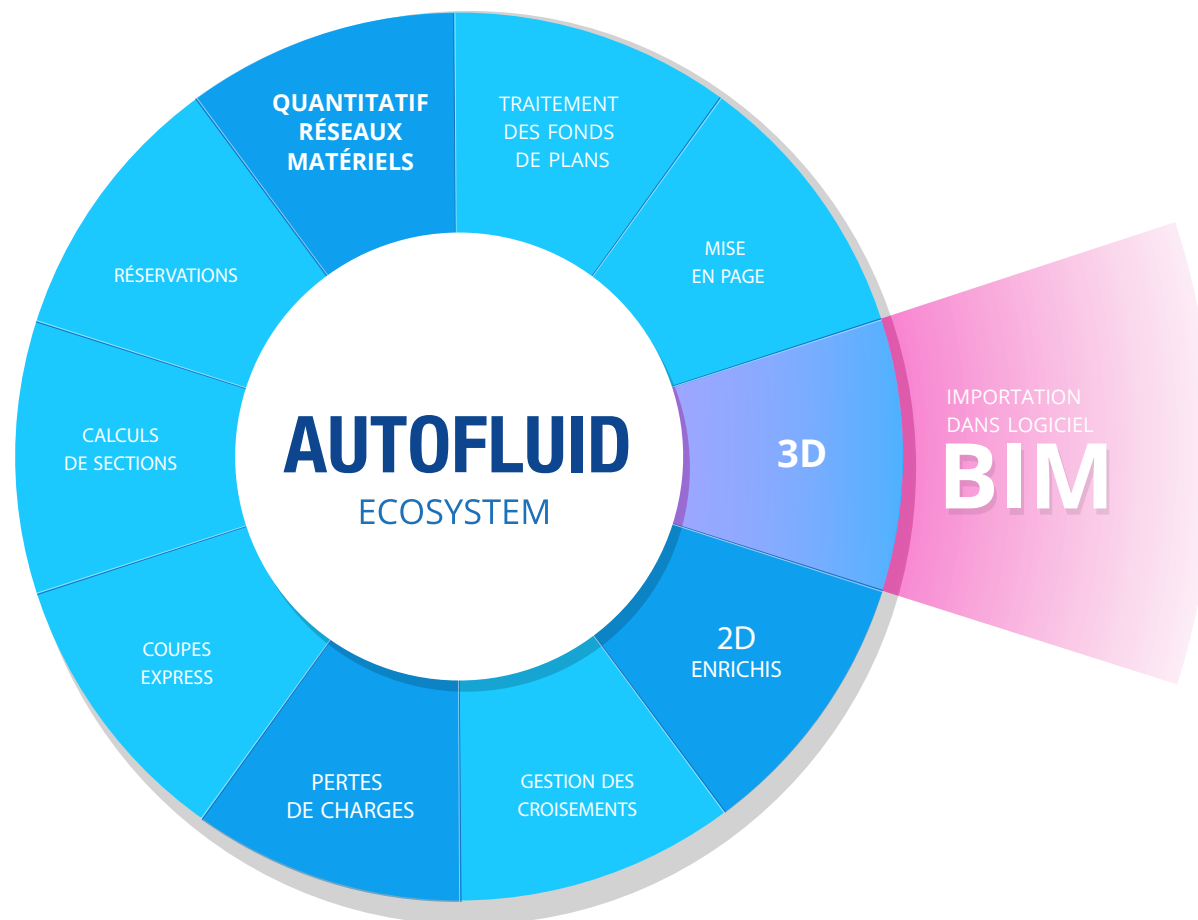


IMPORTATION DANS LA MAQUETTE
Importation de IFC dans la maquette
Accès aux informations de réseau
(dimensionnement, pertes de charge)
Structure du réseau modifiable
Détection des collisions



AUTOBIM3D together with AUTOFLUID 10

Both applications can be combined into one pack to cover the full range of functionalities for fluids networks engineering in 2D and in 3D.



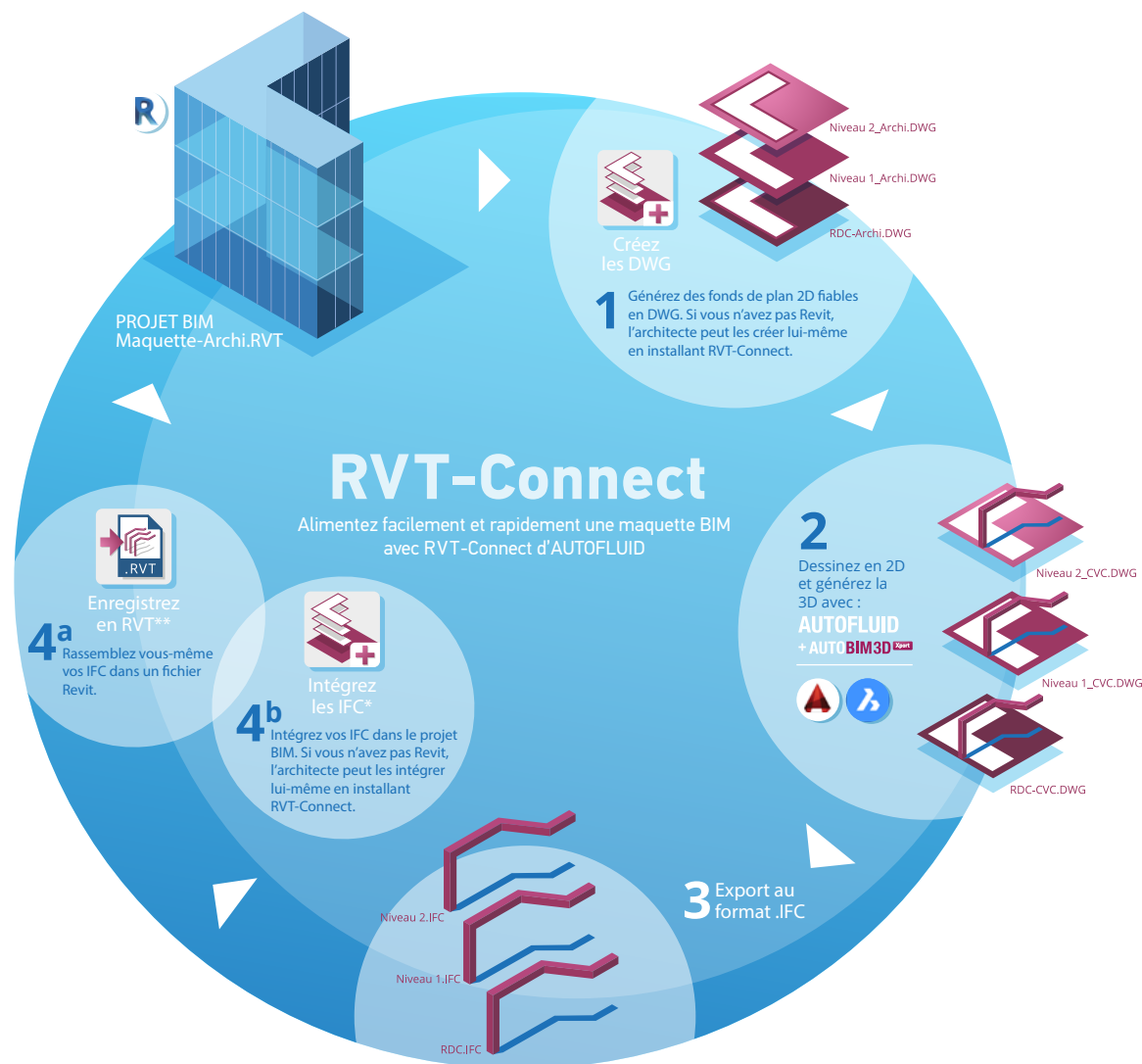


Choose simplicity for your BIM projects

RVT-Connect brings together the best set of tools to integrate AUTOFLUID networks into 3D models. Each step is optimised to make you as efficient in 3D in your BIM projects as in 2D.

The ecosystem of RVT-Connect

RVT-Connect is a plug-in for REVIT that makes it easy for collaborators on a same BIM project to feed networks that were created using AUTOFLUID, into the 3D model. Now you can generate accurate drawing backgrounds and create 3D networks quickly, with AUTOFLUID's high level of precision and without any REVIT training.



*IFC au format IFC2X3 (CSTB) permettant la détection de collisions et le quantitatif. **Réseaux au format .RVT non structurés en systèmes



Les outils du ruban RVT-Connect



IMPORT CAO

Import 3D networks in DWG format. These networks will be treated as non-editable «blocks».



CRÉER
LES DWG

Generate 2D drawing backgrounds from the 3D model. This command lists all the views and levels for easy selection.



TEXTE
PONCTUEL

Create texts from the data contained in each object of the IFC network.



LIER CAO

Embed 3D networks in DWG format as «external reference» into your BIM model. They will be updated whenever the DWG file is modified.



PROPRIÉTÉS
DES ÉTAGES

Manage the list of all the levels in the model to easily find each floor and their properties.



NOMENCLATURE
ET QUANTITÉS

Generate detailed bills of materials from your IFC networks.



LIER IFC

Embed 3D networks in IFC format as «external reference» into your BIM model. They will be updated whenever the IFC file is modified.



INTÉGRER
LES IFC

Once the design of your 2D drawings and the modelling of your networks in your CAD package are finished, they can be exported in IFC format. They will be positioned automatically in the right place and height.



VÉRIFICATIONS DES
INTERFÉRENCES

Check interferences between your AUTOFLUID IFC networks and every other object in the mock up.



LIER REVIT

Embed 3D networks in RVT format as «external reference» into your BIM model. They will be updated whenever the RVT file is modified.



LISTER LES IFC
INTÉGRÉS

List and select networks that were embedded with the «Embed IFC» command.



TEAM VIEWER

TeamViewer module for our Hotline and Training teams to provide assistance.



GÉRER LES
LIENS

Manage linked and imported files (.DWG - .IFC - .RVT - ...)



SAVE RVT

Embed your networks into a blank model and save it as RVT* to share it with your clients and collaborators who use REVIT.

*Not structured in systems.

TraCéo

FLUID SOFTWARE

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