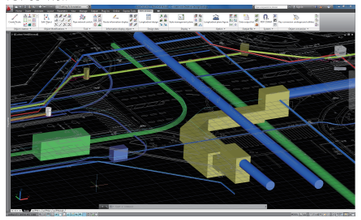
Automatic 3D Modeling

3D objects are created from PDP objects which have the information on the size and depth of conduits.

PDP 3D View



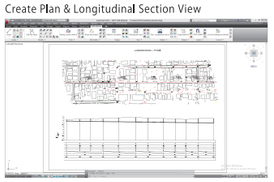
3D objects which can be created by PDP may be used for many purposes. First, the engineer can examine the distance from the intersecting underground utilities and the effect on the adjacent structures while designing conduits. Second, they can be presentation materials for design competitions etc. And third, they can be explanatory materials for meetings with residents participating.

Plan-Profile Drawings

As general procedures for creating drawings, new drawings can be created combining plan and longitudinal section drawings.

Create Plan & Longitudinal Section

Create Plan & Longitudinal Section View

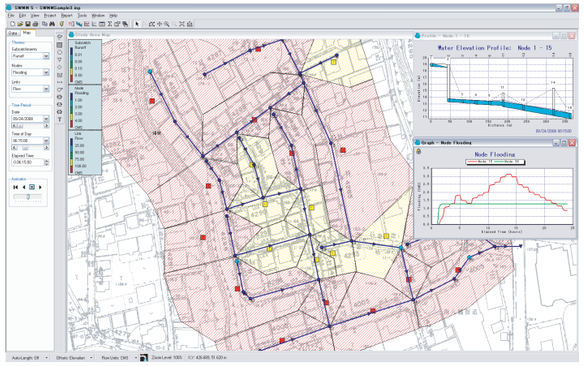


In the "Create Plan & Longitudinal Section" dialog box, it creates multiple drawings automatically. These drawings are created as AutoCAD files, which can be edited by AutoCAD's general-purpose commands.

Storm water runoff analysis system SWMM5 Relation

Based on the data calculated by PDP, data collaboration can be done with SWMM5, the storm water runoff analysis system. Collaboration between PDP and SWMM5 generates the following advantages.
First, while PDP designs using the average rainfall intensity, SWMM5 calculates changes in water lines based on the time-series rainfall intensity; and therefore, it can identify the weak points of conduits.

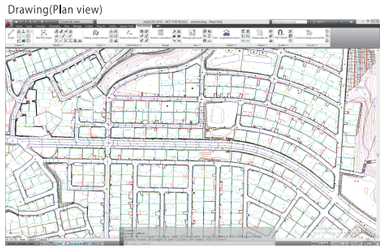
SWMM 5



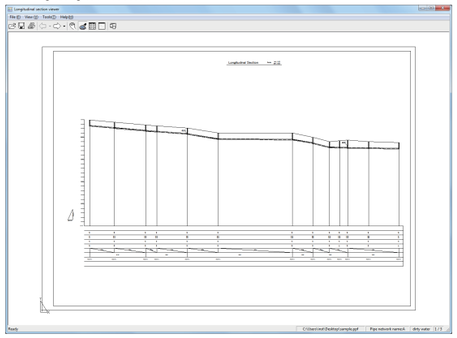
Sample of Drawings, Calculation sheets using PDP

Most of sewage plan drawings are databases with a lot of designing information. If only for the purpose of designing and printing drawings, they can be used by the general -purpose AutoCAD or AutoCAD LT.

Drawing(Plan view)

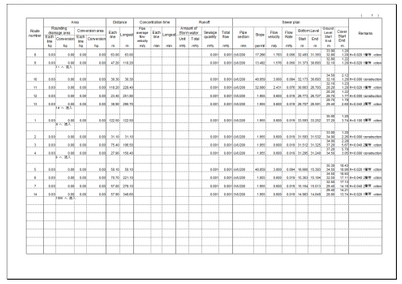


Drawing (Longitudinal section view)



Longitudinal section drawings can be shown in many styles, using the designated longitudinal section formats. You can freely define leader lines on the longitudinal section drawing and band styles below, as well as font sizes.

Flow calculation sheet



As the flow calculation sheet, it creates a calculation sheet to prove as numbers the results of hydraulic and geometric calculations. Since it is automatically written into Excel sheets, editing afterwards should be done on Excel. Moreover, quantity calculation sheets can be used by the same operations.

System Requirements & Support

PIPE Design Pro®17

Microsoft Windows 10 / 11 (64bit) for English language
Autodesk AutoCAD 2020 and above
Bricsys BricsCAD Pro V22 and above
Microsoft Excel 2016 and above
1 GHz and above or compatible processor
RAM:Depends on The RAM required for AutoCAD (8 GB recommended)
Harddisk free space of above 500 MB is recommended.
Video Display: Depends on The video display required for AutoCAD (At least 1600x1050 True Color recommended)"
Pointing device such as Mouse
CD-ROM drive (for installation)
Windows-compatible Printer or plotter
Offer by Subscription (Including Software Support)

Web Support Site for free

PIPE Club

- Download latest version
- Download various formats
- FAQ about Product
- Release information

http://www.pipedesign.co.jp/pipeclub/

Maintenance Subscription

PIPE Support

- Data Recovery Service
- Latest version up
- Flow report Format service
- Section Format service
- E-Mail support

Software & Civil Engineering Technology
PIPE DESIGN, Inc.

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URL http://www.pipedesign.co.jp

AUTODESK
Authorized Developer

Integrated Sewer Plan and Profile Design System

PIPE Design Pro®

"PIPE Design Pro", Integrated Sewer Plan and Profile Design System, will have the power of sewer design packages working with AutoCAD or BricsCAD. It will calculate the invert levels, slopes and diameters of the culverts as well as the design flow, capacity and the flow velocity of each culvert for storm and sanitary sewers.

Welcome to PIPE Design Pro.
PIPE Design Pro will help you develop better, higher quality designs for route design and vertical design within AutoCAD in a short amount of time.
You will reap the benefits of the lower design time, increased productivity and profitability, and improved responsiveness to clients.
PIPE Design Pro provides a unique concept in the sewer design process.
It provides solutions for managing all types of flows, including sanitary wastewater and stormwater inflow.
PIPE Design Pro creates preliminary designs for new sewers and suggests improvements for existing systems. It helps you optimize your pipe network, and find the most cost-effective way to solve system problems.
The PIPE Design Pro was developed using similar calculation solving programs to PIPE NETWORK, being released in 1985.
It has been used by thousands of engineers since its first commercial release in 1998.

Software & Civil Engineering Technology
PIPE DESIGN, Inc.

PIPE Design Pro®

Management

Project
Drawings
Multiple network
Drawing units
Calculation formulas

Database
PipeSection DB
Manhole DB
Inlet DB
Land Use zone

Style
longitudinal section format
Plan style
Calculation sheet

Layer
PDP layers

Data Input

Treatment type
Natural flow
(Separated, Combined storm / sanitary sewers)
Pressure flow
(Separated, Combined storm / sanitary sewers)
Vacuum flow
(Separated sanitary sewers)

Underground facilities
Consideration to a design of intersection between underground facilities and sewer pipes.
Water supply pipe
Gas pipe
Communication cable
Electric wiring…

Data Input

Lateral Inlet
Definition of Laterals
lateral inlets

Flow type
Inlet flow from outside areas
Fixed Inlet flow
Inlet flow from mountain
Outlet flow to outside areas

Ground level
Various commands to acquire ground level of manhole (node)

Compartment line
Get the Area of Routes or the Spans

Private pipe line
Create lateral inlets in the private areas

Inflow, Outflow
Inflow from outside district
Fixed inlet flow data
Inflow data from mountains
Outflow data

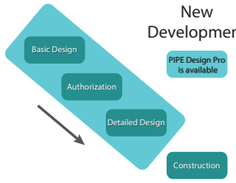
Calculation

Treatment Type
Natural flow (Separated, Combined storm/sanitary sewers)
Pressure flow (Separated, Combined storm/sanitary sewers)
Vacuum flow (Separated sanitary sewers)

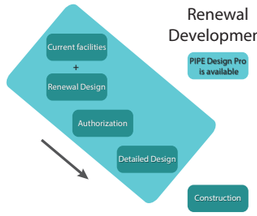
Flow calculation method of sewer pipe capacity
Storm flow formula
(Rational method, Experimental method,
The combination flow method,
The linear curve method, River flow method…)

Procedure for Planning

PDP works very well for designing sewerage systems of new multi-unit apartments etc.
Moreover, it can be used for reconstructing the existing sewerage systems in cities etc. in response to changes in populations.



It sorts out the data of various underground utilities before planning sewage conduits in the development of housing complexes, industrial parks, and so on. In the basic design, it decides the main trunk lines, as well as the main route to the treatment plant. While the detailed design is done after the approval of municipalities, efficient designing is possible by utilizing the data created by the basic design etc.
Whereas construction is executed based on the drawings created by the detailed design, modification of the design on the construction site can be easily done if the design data are available, and drawings etc. can be created as well.

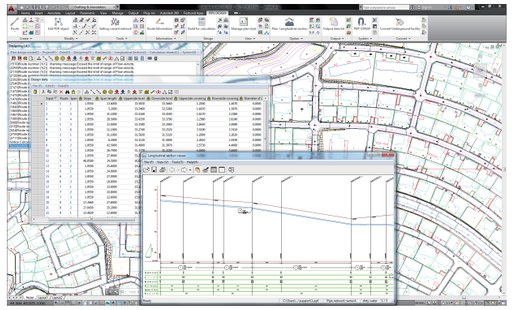


In cities, on the other hand, changes in population etc. make it necessary to increase the size of sewage pipes installed in the past, replace old conduits, and so on. PDP is capable of making data on the current sewage conduits, preparing plans in response to changes in population, planning replacement of the deteriorated conduits, and so on. Moreover, as with sewage conduits, it can sort out the data on various underground utilities which were laid in the past, and reflect them in the renewal plan. In the basic design, as with a new one, it designs the main route by selecting an economically advantageous one. In a similar way for a new plan, construction is executed based on the drawings created by the detailed design, modification of the design on the construction site can be easily done if the design data are available, and drawings etc. can be created as well.

Completely Integrates Plan and Profile Information

PDP is capable of showing the network of sewage facilities and the geometric information of conduits at the same time. As the information of conduits is always integrated, it enables enginners to work efficiently.

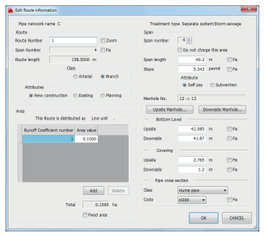
Plan & Longitudinal design view



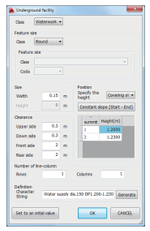
Dialogue Boxes for Fast Data Input

To calculate with pipe networks, you need at least to draw one Route (PDP object) on a drawing.
Underground facility and Lateral data can be defined in the Longitudinal data.

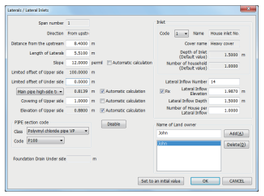
Route Information



Underground facility Information



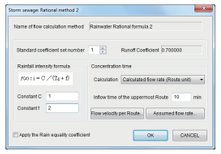
Laterals Information



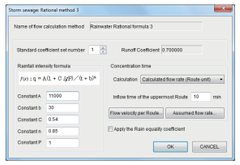
Various Flow Calculation methods

We have incorporated in the Rain intensity formula, which is used in ASEAN countries, Rational method 2, Rational method 3, Wenzel formula, in addition to the Japanese traditional formulas.

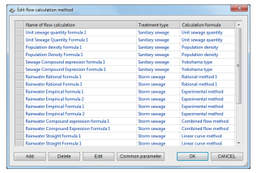
Flow Calculation method



Flow Calculation method



Edit flow calculation method



Calculation

Flow calculation method of sewer pipe capacity
Customization for Flow Calculation types
Customization for the calculation flow types after setting new types per project
Automatic calculation
Automatic calculation of pipe section, slope, pipe and manhole elevation
Pose mode viewer in process of flow calculation
Automatic setting to decide manhole type

Sewer Plan design

Create & Edit PDP Objects
Pipe networks, Routes, Border lines, Compartment lines, Land Use regions, Invalid region, Boundary line of street, Underground facilities, Ground line, Lateral, Vacuum Valve unit, Vacuum Lateral, Private pipe lines, Section valve, Vacuum Access bole, Vacuum station, Inlet flow from outside areas, Fixed Inlet flow, Inlet flow from mountain, Outlet flow to outside areas

Get the Area of Routes
Automatic Area calculation and adjustment of each sub-catchment areas,
Visualization of Area region

Plan style
Switch graphic mode and Print mode,
Manage plan symbols,
Manage plan style per treatment type,
Creating 3D solid model object from PDP object

Longitudinal section

Format and layout
Free style format for each local government
Multi layout (Automatic multiple layout)
Layout using PDP object properties

Plan & Longitudinal section
Automatically combine the plan part of a Route and a Longitudinal section.

Reports

Flow reports
Output flow report, Output Loss calculation sheets (Vacuum flow)

Quantity reports
Output quantity report for PDP objects

Input & Output with files

Flow reports
Output flow report, Output Loss calculation sheets (Vacuum flow)

Quantity reports
Output quantity report for PDP objects

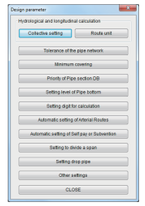
Others

Export to SWMM5
Export CSV file to SWMM5
(dynamic hydrology-hydraulic water quality simulation model)

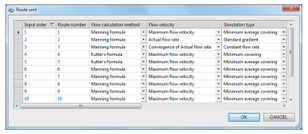
Automation Features

These are dialog boxes to set various parameters to be used for designing sanitary-water and storm-water conduits. It is capable of having various settings such as those which can be customized by architects —i.e., rainfall intensity formulas, unit sanitary amount formulas, and setting digit for calculation—as well as the maximum and minimum values for flow velocity, and the minimum and maximum values of earth covering.

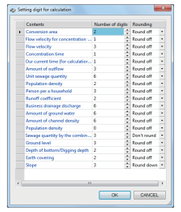
Parameters for Calculation



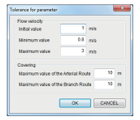
Configure type Formula & Simulation for flow volume & slope



Setting digit for calculation



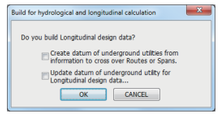
Tolerance of the pipe network



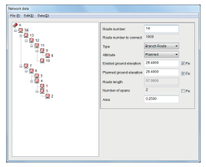
Longitudinal and Flow Calculation with a flexible manner

When doing the longitudinal calculation for sewage pipe networks, all information is considered, including hydrological and longitudinal calculation parameters as well as Pipe section DB, Manhole DB, Underground utility information, the set flow rate of each conduit, and ground levels.
While automatic designing is possible, civil-designers can proceed with designing by making decisions in interactive works.

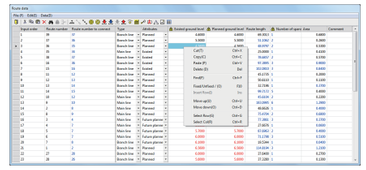
Generate data from drawing



Tree of pipeline network



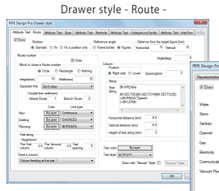
View of pipeline network



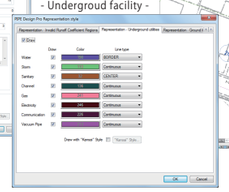
Control Styles and Printing

It controls the display and printing of sewage networks on the plane created by PDP. It can do the attribute information display of conduits, underground utilities display, color setting, etc.

Drawer style - Route -



Representation style - Underground facility -

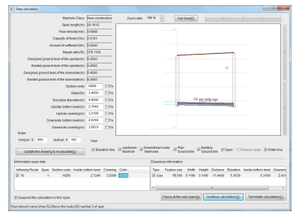


Plan style

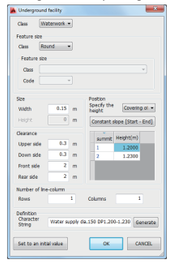
Support for Underground Utilities and Ground Contour Lines

It can also utilize underground utilities and changes in the ground surface as conditions for designing conduits. In the calculation process, the distance between the conduits and underground utilities or the ground surface is displayed on the dialog box when necessary. Depth of the conduits etc. can be changed at this stage.

Step Calculation Dialog Box



Underground facility Dialog Box



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Seamless Design Process

Management
▼
Data Input
▼
Calculation
▼
Plan
▼
Longitudinal Section
▼
Reports
+
Input & Output with files
+
Others

Available for the latest AutoCAD Version!

Takes Advantage of the powerful features of the latest AutoCAD