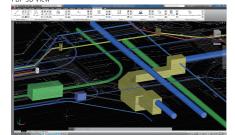
Automatic 3D Modeling

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



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.

PIPE Club

Download latest version

Download various formats

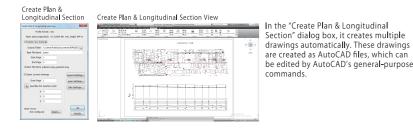
ttp://www.pipedesign.co.jp/pipeclub

FAQ about Product

Release information

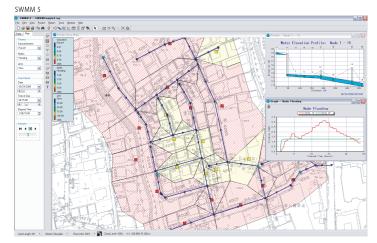
Plan-Profile Drawings

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



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, SWMMS calculates changes in water lines based on the time-series rainfall intensity; and therefore, it can identify the weak points of conduits.



System Requirements & Support

PIPE Design Pro[•]17

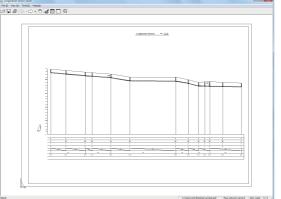
Microsoft Windows 10 / 11 (64bit) for English language Autodesk AutoCAD 2020 and above Bricsys BricsCAD Pro V22 and above Microsoft Excel 2016 and above 1 GHz and above or compatible processor RAM:Depends on The RAM required for AutoCAD (8 GB recommended) Harddisk free space of above 500 MB is recommended. 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)

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 (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

		A	60		Dis	NCR.	Cance	tatio	Sine			1000					town p	a.				
Rode		Kunding Noge arms Conversion	Conv EAX Ine Na	Conversion	ite	Lorgest	Pite and the staticity and the staticity and the			Unt	reador Total rens	Severage Quality	Tutal Tax	Pipe sezion		Fox velocity m6	Rate		End	Land Start Start End	Cover Start Dref	Remarks
	-				41.00	_			-					16.208	17.265				21.200	11.66	1.29	
÷	0.00		5.00		6140					-				M-208	17.00					28		5-2023 1979 other
-		21 A 83										1997	100	10004	10.4%		1.000				10	1-1-1-1 BY 1000
-10	0.00	0.00		1.00	38.30	3.39						6.001	1.00	94039	45.859	1.009	0.004	32.17	31.692	3458	125	-100 anticle
11	9.92		6.00	1.00	118.20	228.40						1.02	1.02	141228	12.000	240	1.07	3.95	3.70	22.10	120	+-1.03 ·## -cter
12	0.00		5.00	5.00	21.00	281.80						5.001	1.00	26,208	1.000	1.000	1010	20.772	are	2620		-100 anductor
12	0.00	0.00	5.00	5.00	38.90	286.72						0.001	1.00	84/208	1.000	0.000		28.757	2.10	20.72		+100.8¥.ste
		AL EL																				
1	0.00	1. 20	8.00	E.00	122.60	122.10						6.001	8.00	04/208	1.995	0.600	6018	33.983	33.242			1-112 (BV etc.
								-						14.738	1.955			14.000		11.00	128	t-100 gratuctor
	0.00		6.00		73.40									04/208	1,955				21.22	34.35	128	1-1(4) 317 cto
	0.00		6.00		27.90									04/208	1.955					-12		1-108 gratuctor
		トへ通え																				
5	0.00	0.00	6.00	5.00	3.2	58.10						5.00	1.00	040208	+0.000	2,000	0.004	10.000	15.290	34.58	140	1-1121 197 cbs
	0.00	0.00	6.00	5.00	78.70	221.10						6.001	1.00	+4/208	1.955	2.000	6.019	15.363	15.104	34.52 32.58	17.11	1-10428W clas
	0.00	0.00	8.00	E.00	17.00	278.10						8.001	1.00	04/208	1.995	0.000	0.018	15.164	15.013	22.55	14.10	
14	0.00	0.00	8.00	8.00	57.90	348.40						8.001	1.00	04/208	1,995	4.600	609	14.967	14.545		14.21	1-1123 (B) -tes
												_								_		
	-														-					-	-	
												-										
						-															-	
															-							

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 operation

PIPE Support

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

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.

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.

Head Office:1-21-35, Kusatsu-Shinmachi, Nishiku, Hiroshima, 733-0834, Japan Phone +81-82-279-8200, Fax +81-82-279-8207 Tokyo Branch:1-9-31, Konan, Minato-ku, Tokyo, 108-0075, Japan URL http://www.pipedesign.co.jp

- - E-Mail support



- You will reap the benefits of the lower design time, increased productivity and profitability, and improved responsiveness to clients.

PIPE Design Pro®

Management

Project

Drawings Multiple network Drawing units Calculation formulas Database PipeSection DB Manhole DB Inlet DB Land Use zone Style ongitudinal section format Plan style Calculation sheet

Layer PDP lavers

Data Input

Treatment type

Natural flow (Separated, Combined storm / sanitary sewers Pressure flow Separated, Combined storm / sanitary sewer

Vacuum flow (Separated sanitary sewers)

Underground facilities

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

Data Input

Lateral Inlet

Definition of Laterals lateral inlets

Flow type

nlet flow from outside areas Fixed Inlet flow Inlet flow from mountain Outlet flow to outside areas

Ground level

/arious commands to acquire ground evel of manhole (node)

Compartment line Get the Area of Routes or the Spans

Private pipe line Create lateral inlets in the private areas

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

Calculation

Freatment Type

atural flow (Separated, Combined storm/sanitary sewer essure flow (Separated, Combined storm/sanitary sewers cuum flow (Separated sanitary sewers)

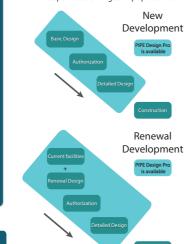
low calculation method of sewer pipe capacity

orm 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 Attribute @ Self care 42.085 m EF 41.87 m EF 2.765 m Effe Definition Character 52/Hg Water sup Hume pipe H300 • OK CANG



Wenzel formula, in addition to the Japanese traditional formulas

-

OK CANGE

Columns

Flow Calculation method Flow Calculation method

Calculation Calcula

Flow velocity per R

× 1	Storm sewage: Rational method 3
nula 2	Name of flow calculation method Rainwater Rational formula 3
oefficient 0.700000	Standard coefficient set number 1 🚊 Runoff Coefficient 0.700000
dect flow rate (Route unit) -	Rainball intensity formula Concentration time $f(v): q = A(1 + C) g F J / (t + b)^{te}$ Calculation Calculated flow rate (Route unit)
ermost Route 10 min	Constant A 11000 Inflow time of the uppermost Route 10 Constant b 39 Constant C 0.54 Constant C 0.54
OK CANCEL	Constant C 0.54 Constant n 0.85 Constant P 1

Edit flow calcu	lation met	had
Edit flow calcu	lation met	had
Edit flow calcu	lation met	hod
ty Edit Row calculation method		
Name of flow calculation	Treatment type	Colculation
Unit sewage quantity formula 1	Sanitary sewage	Unit sewage
Unit Sewage Quantity Formula 1	Sanitary sewage	Unit sewage
Population density formula 1	Sanitary sewage	Population
Population Density Formula 1	Sanitary sevage	Population
Sewage Compound expression formula 1	Sanitary sevage	Yokohama t
Sewage Compound Expression Formula 1	Sanitary sewage	Yokohama t
Rainwater Rational formula 1	Storm sewage	Rational me
	Storm sewage	Rational me
Rainwater Rational Formula 1		Eperimenta
Rainwater Rational Formula 1 Rainwater Empirical formula 1	Storm sewage	
	Storm sewage Storm sewage	
Rainwater Empirical formula 1		Epermenta

Calculation

Flow calculation method of sewer pipe capacit

ustomization for Flow Calculation types Customization for the calculation flow types after setting new types per project utomatic 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 Object Pipe networks, Routes, Border lines, Compartment lines

Land Use regions, Invalid region, Boundary line of street, nderground facilities, Ground line, Lateral, Vacuum Valve u

Get the Area of Routes

of each sub-catchment areas, isualization of Area regior

Plan style

Switch graphic mode and Print mode, Manage plan symbols, Manage plan style per treatment type.

Longitudinal section

Format and layout ree style format for each local gove 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

low 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 imulation model)

Automation Features

Parameters for Calculation Configure type Formula & Simulation for flow volume & slope Setting digit for calculation



Generate data from drawing

Do you build Longitudinal design data

View of pipeline network

Build for hydrological and longitudinal calculation

Create datum of underground utilities from information to cross over Routes or Spans.

OK CANCEL

interactive works.

Automatic Area calculation and adjustmer

eating 3D solid model object from PDP object

		Reals number to connect	7,01	Distributes	& based ground level & Fig					Comment	
1	20		Banch line	Farmed	6.8000	6.6000	60.300.1	1	0.6800		
2	17		Banch lose	Farmed	3.3000	3,3000	11.3362	2	0.3800		
		8	Banch low	Farmed	2 5670	4 1400	613792	2	6,5300		
4			Main lose	Instead	Cut(7)	Cof-X	21,0000	5	5.4300		
5	-		Banch live	Inded	CepyICI	064-0	31.002	2	6.5700		
6	26		Bank inc	Initial	Fair (P)	CM-V	97,2895	1	5.9000		
	25	35	Bank ine	Initial	Delete (D)	Del	252,0453	2	5,5400		
	22	12	Bank line	Reveal	Perd?)	Det.	612715	1	6,2000		
	12	12	Band Ine	Reveal	Find(?)	Cheve	5046233	1	6.3300		
18	13	34	Banch line	Reveal	Fault Writed /	10 50	127316	1	8.3300		
11	24	15	Banch line	Raund	Inset Ease		99,2172	5	5.4000		
12	18	12	Mainline	Raund			<14234		6,2200		
13		10	Mainline	Played	Move up(2)	Chil-U	2010005	6	1,2900		
24	2	8	Mainline	Planed	Move down(0)	OH-D	41.653	1	5.4000		
15		9	Mainline	Planed	Select Reartist	04-5	254796	2	5.6800		
15	3	4	Main line	Fature planes	Select CollPo	Col-R	17,2862	2	6.3700		
17	4		Main Sine	Fature planes			116676		5.0600		
18	5		Main Sine	Fature planes	\$3000	\$,7000	£7,66G	2	5.4000		
19	6		Main Sne	Fature planes	6.0000	6.0000	71,1790		6.5800		
29	2	8	Banch line	Fature planes	6,3000	6,2000	29,5366	1	5.5400		
2	1		Banch line	Planed	6,5000	6,5000	234,8234		1,2300		
22	20	28	Banch line	Planed	6.0000	6.0000	37,5400		6,2700		
	28	8					37,2299				

×

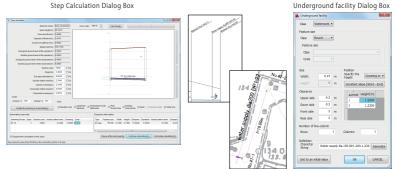
Control Styles and Printing

Drawer style - Route Column Poston @ Tight sche Aller Higherich Sing Sing Mittabe 0 Low Spacegie Headland TO Mathemal Spontarile Battaland Anna Run 1 Batch Run Cale Lantger Micare Creinuna • Dolare Calolicita • Bicare actions • Bicare actions • Bicare • Hight fract any (w) Tet any Nepton Define 28 Technol 28 Tet often 28 often 28 period Test color Bylager Test also SCIPUTT -Date allo Manuel Spin

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



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



Dass Round •



5 m Specify the Coverts

acuum 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 area

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

	Simulation type		Flow velocity	
	Minimum average covering .	٠	Maximum flew velocity	•
	Standard gradient .		Actual flow rate	•
	Constant flow rate .		Convergence of Actual flow rate	•
15	Minimum covering .	•	Maximum flow velocity	•
	Minimum average covering .	٠	Maximum flow velocity	•
	Minimum average covering *	٠	Maximum flow velocity	•
	Minimum average covering *	٠	Maximum flow velocity	•
	Minimum average covering *	٠	Maximum flow velocity	÷
	Minimum average covering	٠	Maximum flow velocity	ł
1	Minimum average covering .	-	Maximum flow velocity	•
	,			

Tolerance of the pipe network

Plave skilds Island udle 1 mit Mathem roke 04 mit Mathem roke 3 mit Coving Lashamm value of the Hestal Robe 19 mit Mathem roke of the Brach Roke 19 mit OK CANCEL	lerence for parameter				x
Internance international inter	Flow velocity				
Alaximum value 3 m/s Coving Naiximum value of the Antelial Route 99 m Naiximum value of the Branch Route 99 m	Initial value	1	mb		
Covering Naximum value of the Arterial Route 10 m Naximum value of the Branch Route 10 m	Minimum value	0.8	mis		
Naximum value of the Arterial Route 10 m Naximum value of the Branch Route 10 m	Maximum value	3	mis		
	Maximum value of th	e Branch Ro		10	

Contents	Number of d	igits.	Rounding	
Conversion area	2		Round off	*
Flow velocity for concentration	1	4	Round off	
Flow velocity	3	4	Round off	*
Concentration time	1	1	Round off	٠
Our current time (for calculation	1	0	Round off	•
Amount of outliew	3		Round off	•
Unit sewage quantity	6	4	Round off	•
Population density	2	4	Round off	•
Person per a household	3	- 2	Round off	•
Runoff coefficient	2		Round off	•
Business drainage discharge	6	-	Round off	*
Amount of ground water	6	1	Round off	٠
Amount of channel density	6	0	Round off	•
Pepulation density	0		Round off	•
Sewage quantity by the combin	3	1	Don't round	•
Ground level	3	4	Round off	•
Depth of bottom/Digging depth	2	- 2	Round off	•
Earth covering	2	-	Round off	
Sore	3	-	Round down	*

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



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.







Takes Advantage of the powerful features of the latest AutoCAD