

# **OCTAS<sup>®</sup>**

## **Operation guide**

**OYO**



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### 【 Precautions of OCTAS® 】

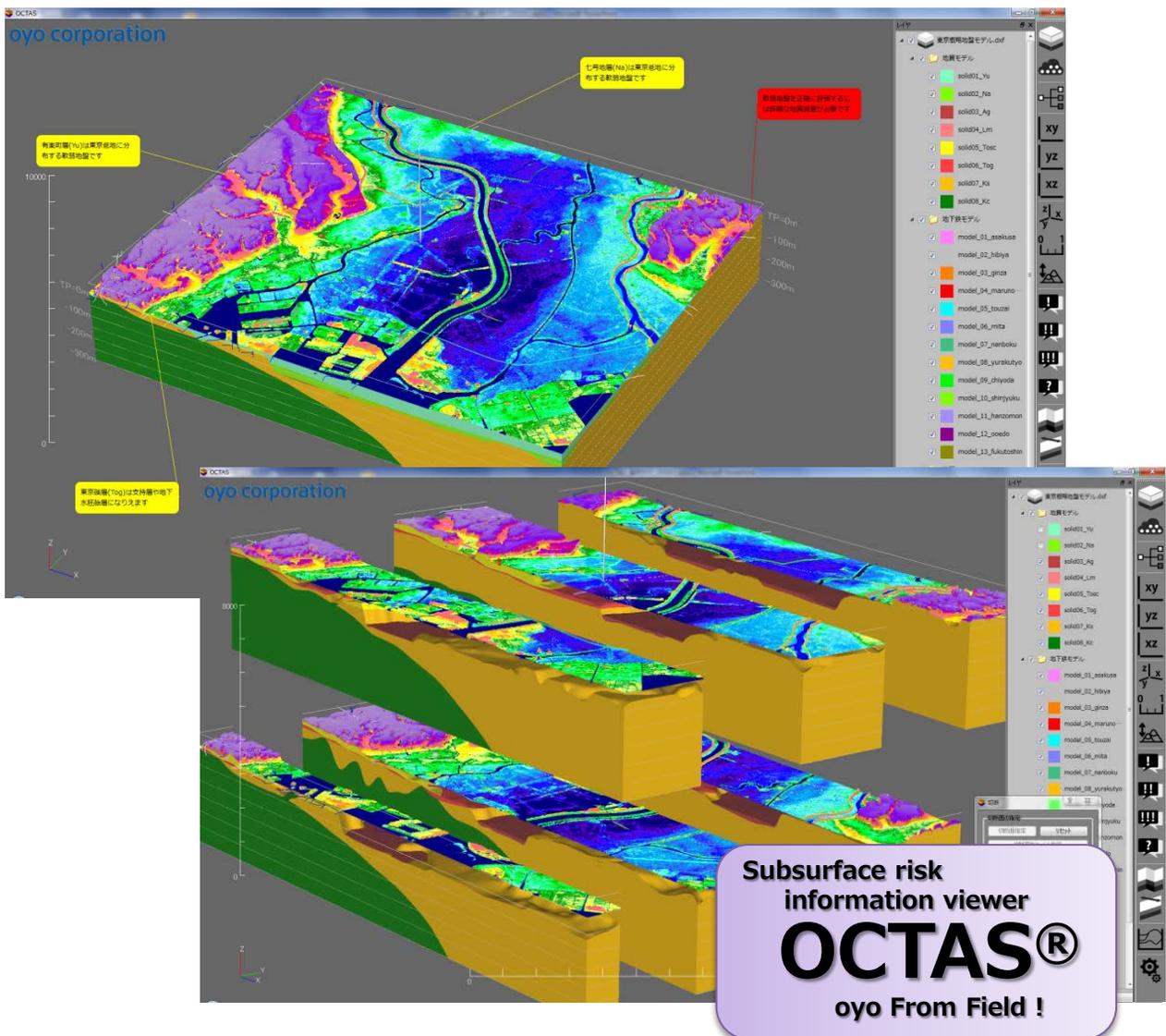
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- 3 Retribution of OCTAS is permitted at no charge and by writing "OYO corporation" as copyright holder.

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- 5 Unauthorized activities with OCTAS:
  - making a new license or sublicense of OCTAS,
  - selling, renting, loaning, leasing OCTAS and transacting used one,
  - modifying, reversing engineering, decompiling, disassembling OCTAS,
  - altering this guide,
  - acting illegally, acting contrary to public order or morality, and acting in such way of all being corresponded or being closely related that OYO corporation judge,
  - acting in all way that OYO corporation judge as it has fear of losing our social credibility or economic loss,
  - removing or nullifying preset technical restrictions and publishing of the method of them for the purpose of right protection.
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OCTAS® is a tool of “Visualizing” subsurface risk information at easy operation.

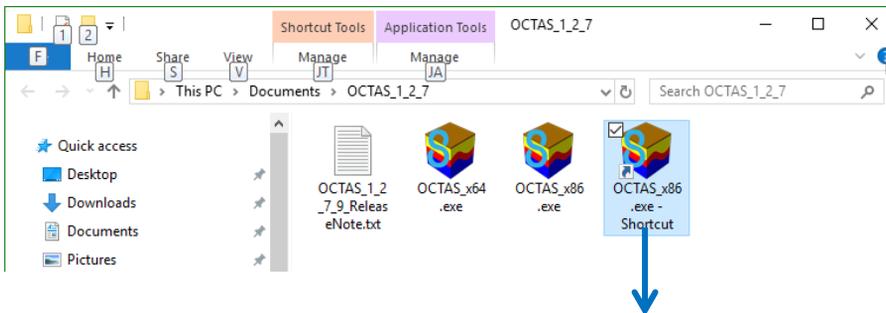
- A loaded modelling data can be looked from various angles.
- Sections of strata and structure models are looked at optional position, and can be saved as CAD files.
- Registered information can be displayed over the model.



Subsurface risk  
information viewer  
**OCTAS®**  
oyo From Field !

## ◆ Unzipping and placing distributed files

1. **OCTAS\_\*\*\*\*\*.zip** is unzipped in an optional place.
2. "OCTAS" folder is copied in C|OCTAS under C drive.  
\* It is OK to copy in an optional place if you don't have access right to C drive.
3. Please select OCTAS matching to your computer's configuration (32 bit or 64 bit), and make the either shortcut of them. OCTASx86 (compatible with 32 bit) or OCTASx64 (compatible with 64 bit)
4. Please copy OCTAS' s shortcut on your desktop.



The shortcut is placed on your desktop.

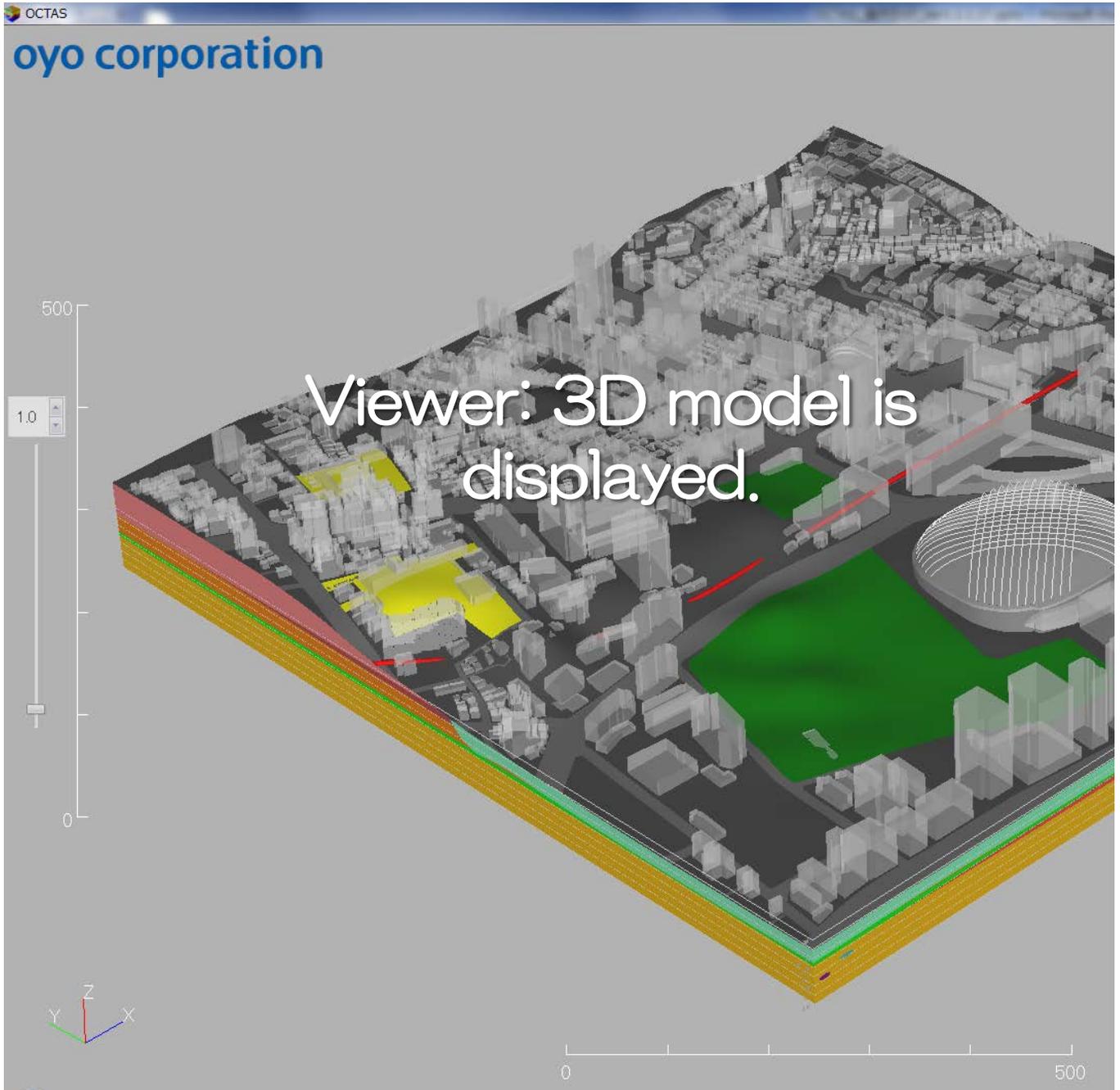
[ System requirements of OCTAS® ]  
OS : Windows7, 8 32 bit/64 bit  
Recommend : 4 GB or more of RAM.  
\*This requirement is not necessarily assured to completely move OCTAS at your personal computer.

### ◆ To start up OCTAS.

OCTAS is started up by clicking the shortcut icon.

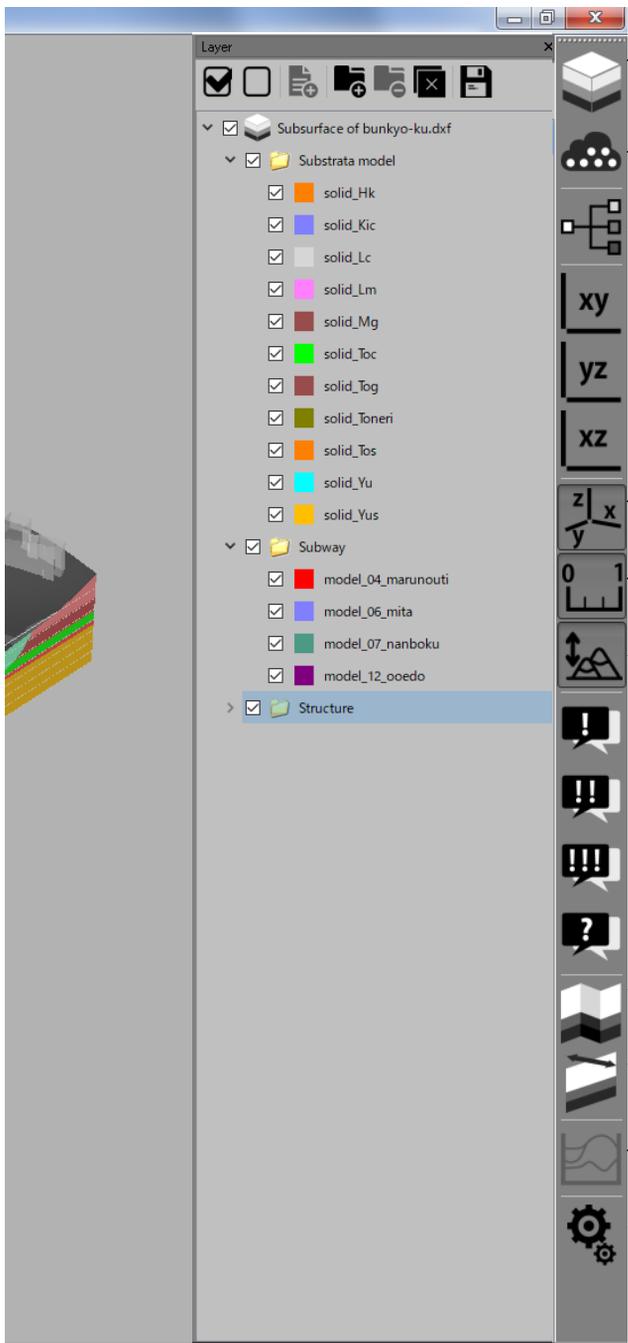


### ◆ Viewport of OCTAS



Layer manager

Display or non-display 3D model is selected and Layer property is edited.



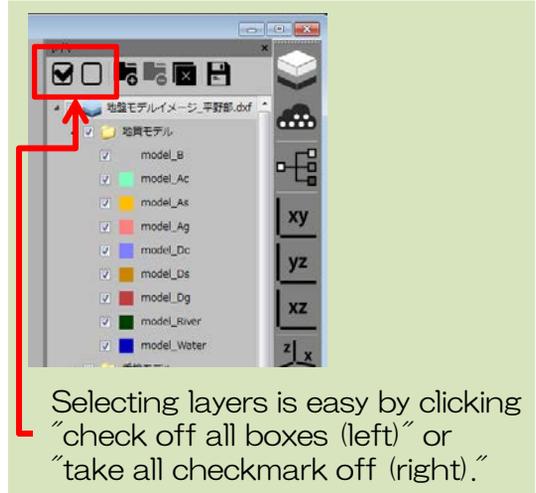
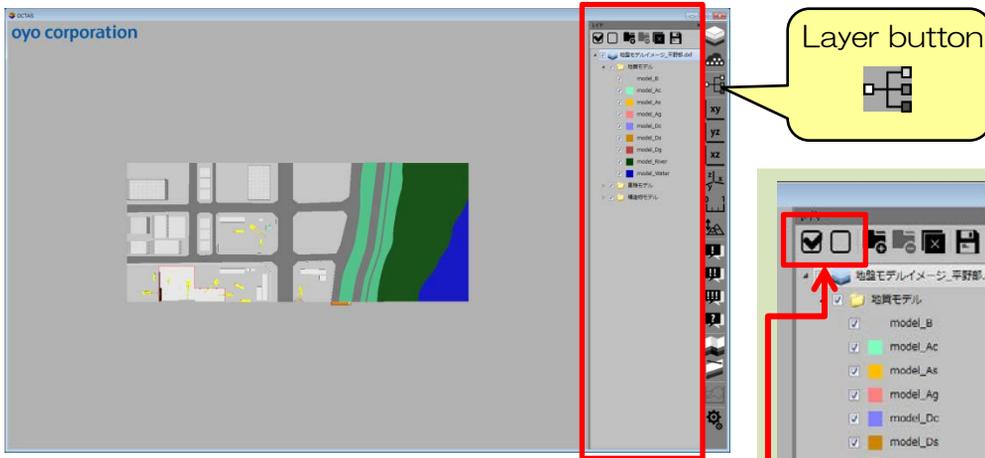
- ← Model button  
3D model file is opened.
- ← Point cloud button  
3D point cloud file is opened.
- ← Layer button  
Layer configuration of current file is displayed.
- ← Change viewpoint button  
A viewpoint of 3D model is changed.
- ← Axis button  
The axis marker is displayed.
- ← Scale button  
The scale bars are displayed.
- ← Expand vertically button  
Vertical magnification of 3D model is changed from 0.1 to 20.0.
- ← Info button  
Registered information is displayed.
- ← Cut button  
The cross-sectional view of model is displayed.
- ← Sliding section button  
Sections are displayed along a line in series.
- ← Export DXF button  
A section displayed with the "Cut" button is exported as a CAD file.
- ← Set up button  
Various settings are input.

# 1. Elemental operation of OCTAS

## 1. 4 Viewport configuration

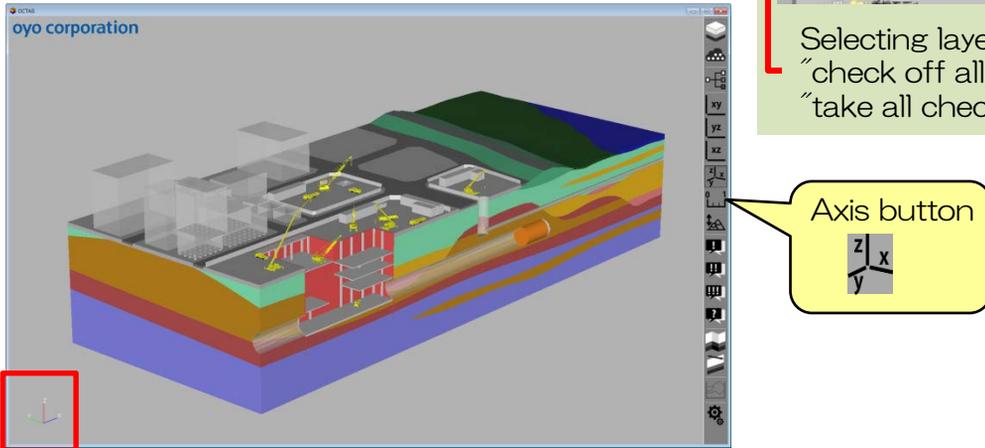
### 1. To display a set of layer

Clicking the "layer" button, the layer configuration is displayed.  
Taking a checkmark off, the layer is not displayed.



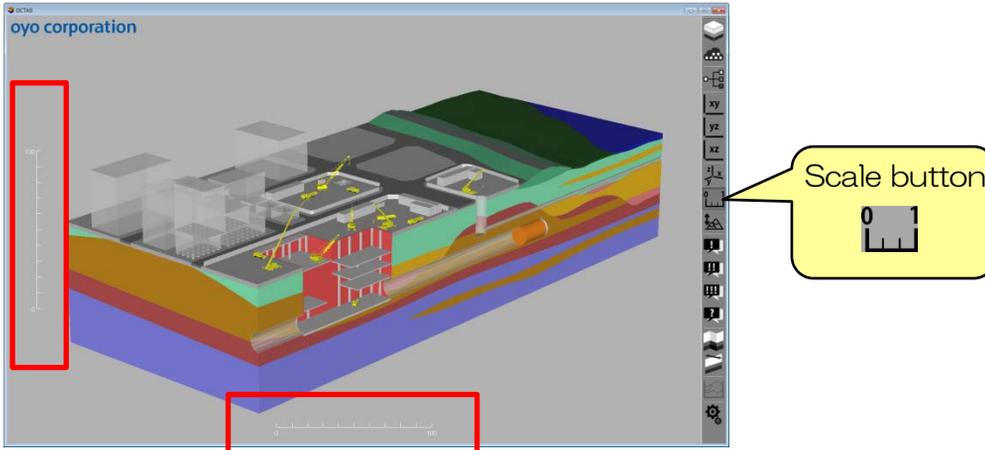
### 2. To display the axis

The "axis" button is clicked.



### 3. To display the scale bars

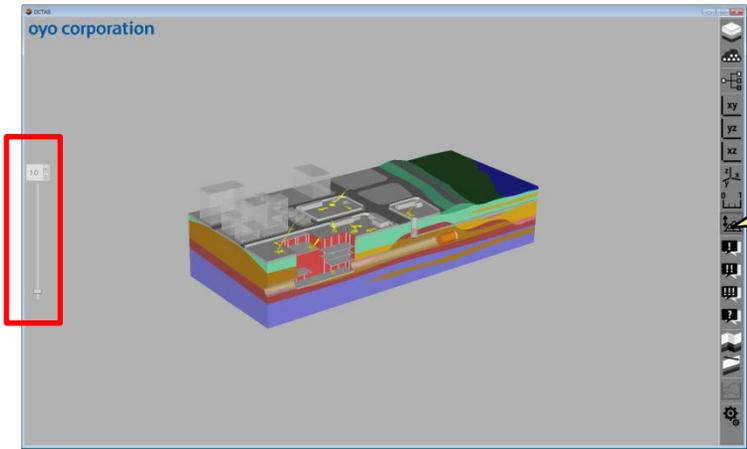
The "scale" button is clicked.



1. To change the vertical scale

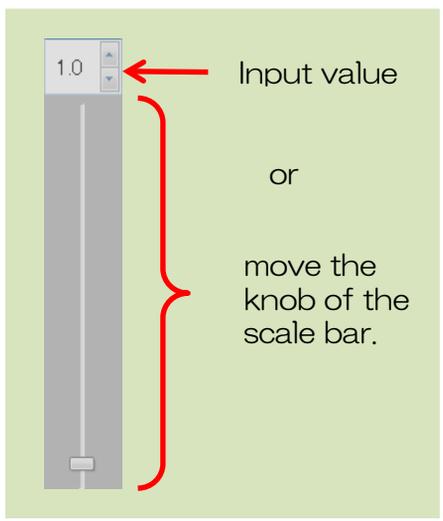
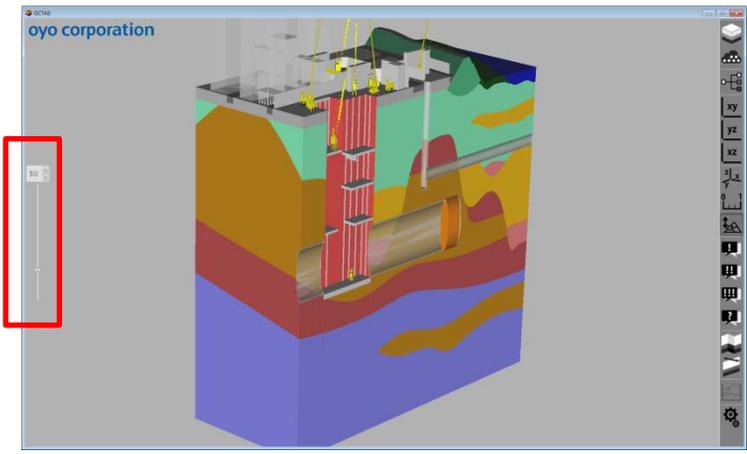
Controller is displayed by clicking the "expand vertically" button.

The vertical scale can be changed by inputting value directly or moving the knob of scale bar.

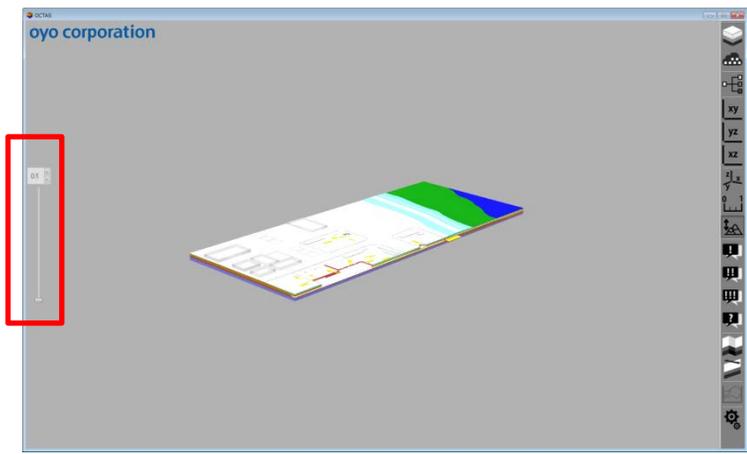


Expand vertically button

Ex. 1) vertically 5 times



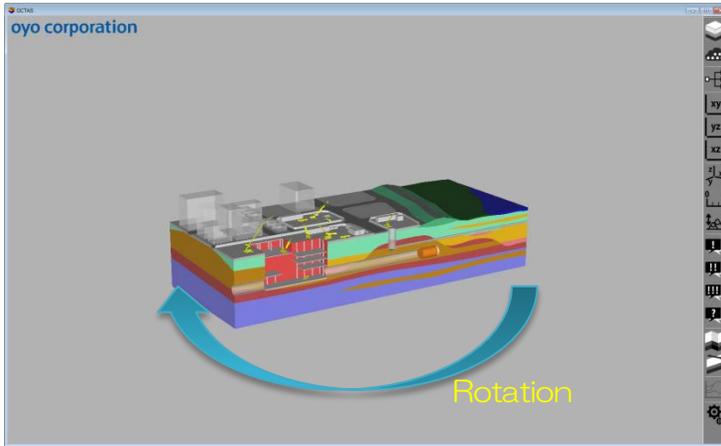
Ex. 2) vertically 1/10 times



# 1. Elemental operation of OCTAS

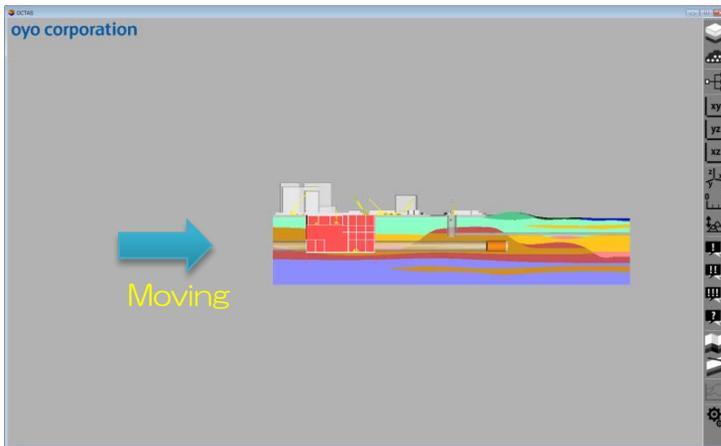
## 1.5 To change a viewport

### 1. Rotation



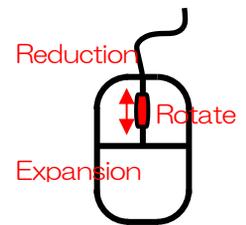
The mouse is moved as left-clicking.

### 2. Moving



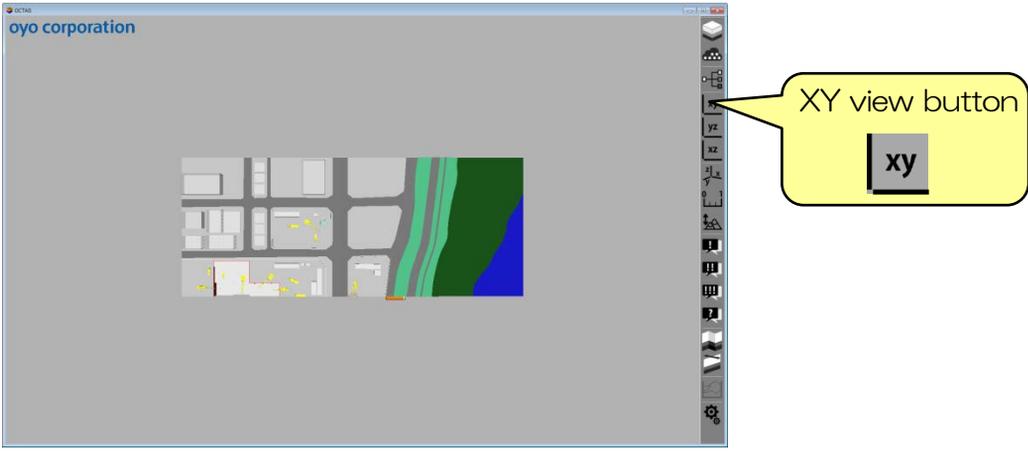
The mouse is moved as right-clicking.

### 3. Expansion and reduction

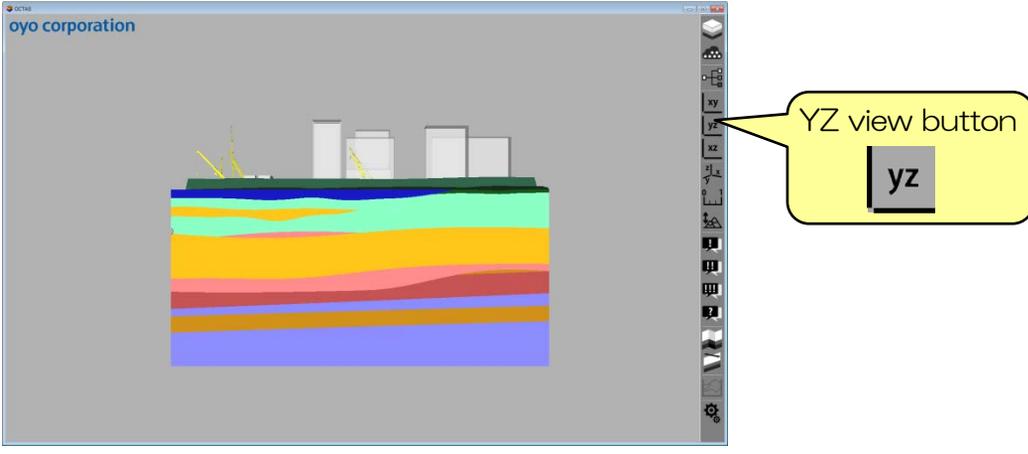


The wheel of mouse is scrolled.

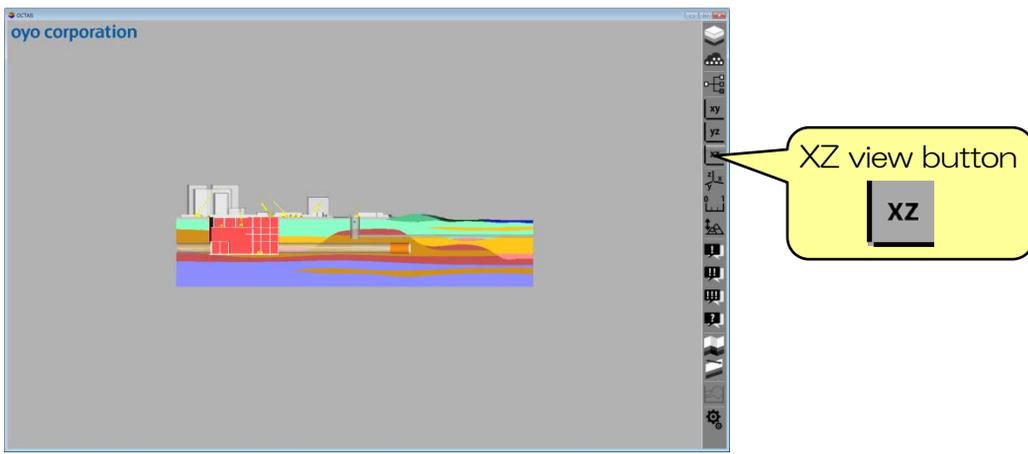
4. XY view (Initialized viewer)



5. YZ view



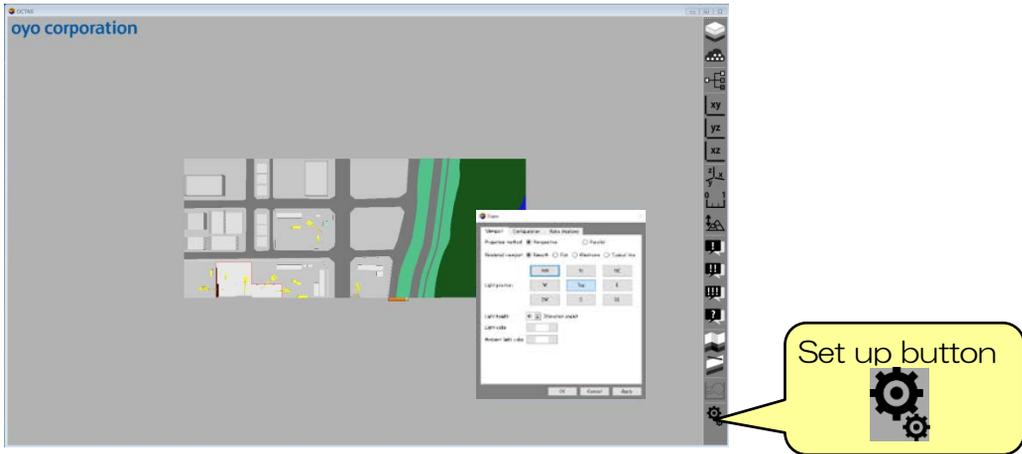
6. XZ view



# 1. Elemental operation of OCTAS

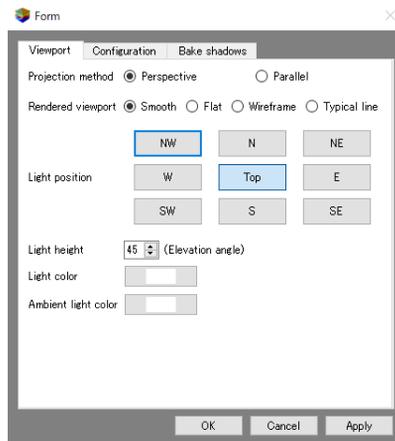
## 1.6 To setup viewer

1. The "set up" button is clicked.



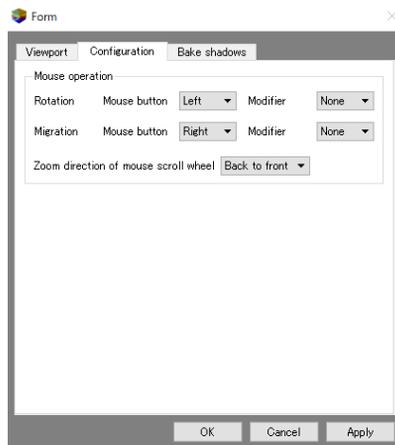
2. Viewport

Setting can be altered that of projection method, the rendered viewport and the light source.



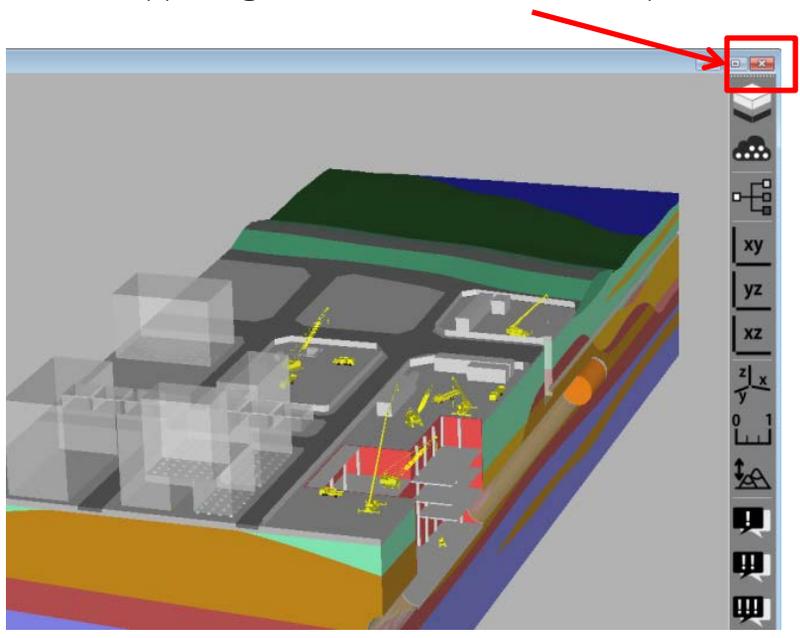
3. Configuration

Mouse operation setting can be altered.



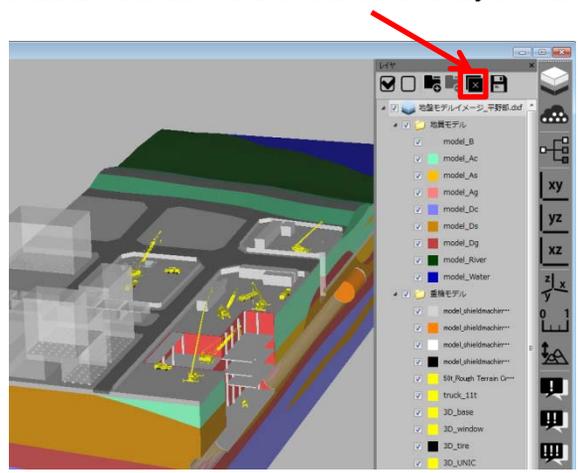
◆To terminate operation (There is no function of viewer saving.)

The upper-right close box is checked to quit OCTAS.



Or

The "close the data" button is clicked as the layer manager has been visible.

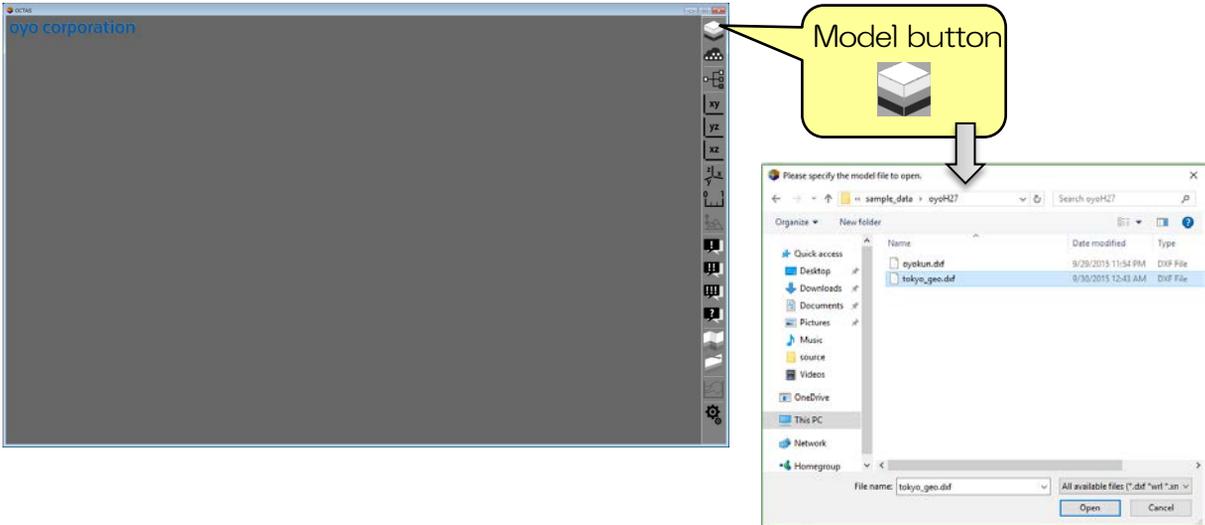


## 2. To observe model

### 2. 1 3D CAD data

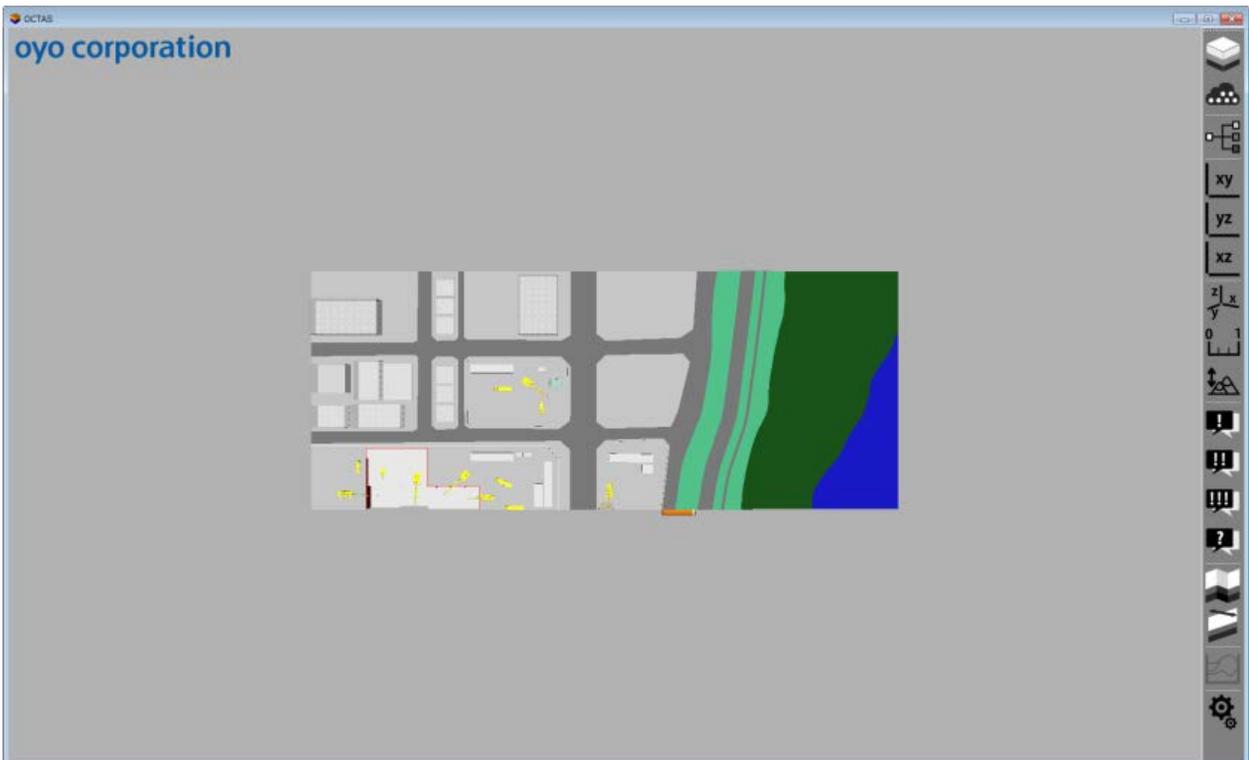
◆To display the geo model of 3D CAD data made on GEO-CRE

1. The "model" button is clicked, then the visualizing data is selected.



[The loadable file format]  
+ dxf (Ver. 2004 or lower)

2. A model is displayed.  
(Top of model is displayed when it is opened.)



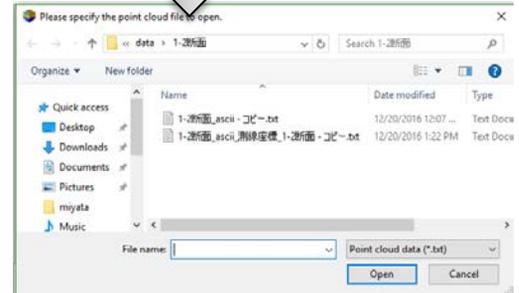
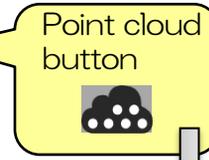


## 2. To observe model

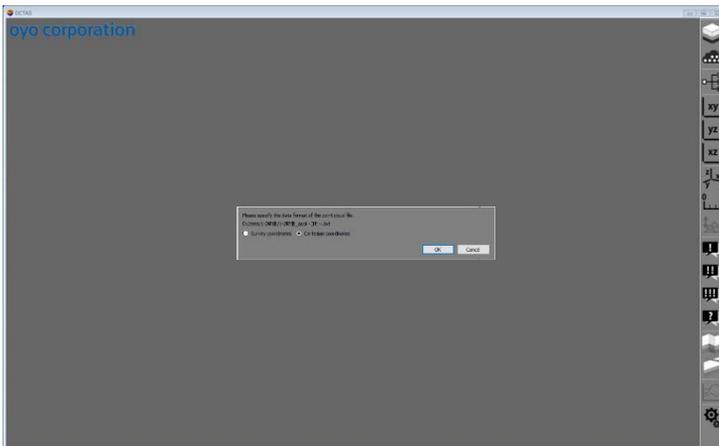
### 2. 2 Point cloud data

◆ To display a point cloud data with RGB colors

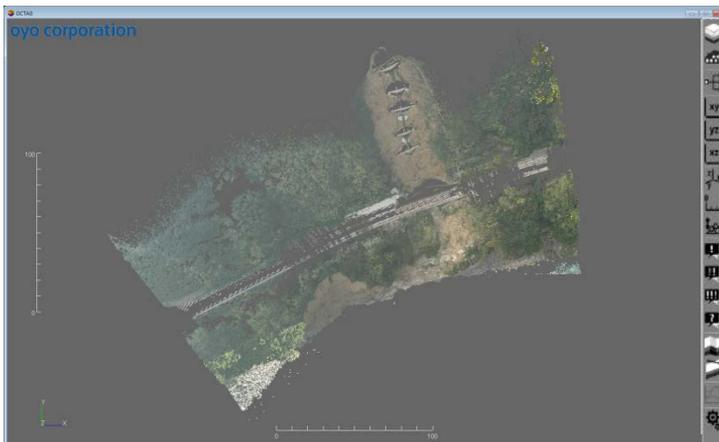
1. "Point cloud" button is clicked and the visualizing data is selected.



2. "OK" is clicked after specifying the coordinate standard (Survey or Cartesian) of the point cloud.



3. A point cloud is displayed.

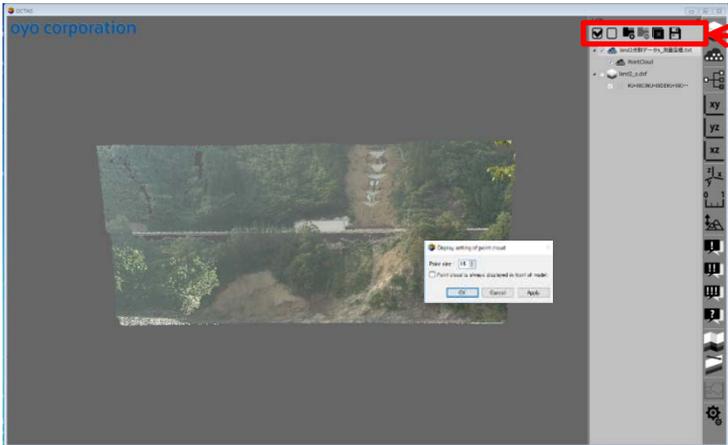


- [A format of point cloud]
- + Comma separated txt files
  - + The six lines of x, y, z, R, G, B  
The value range of RGB: 0-256
  - + Survey coordinates or Cartesian coordinates

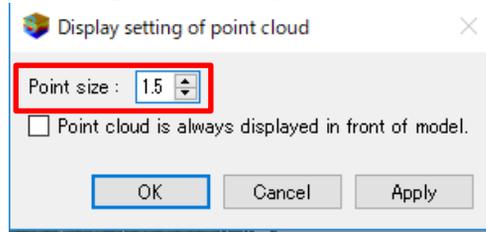
4. A point cloud data can be covered with dxf data.



5. Point size of cloud can be changed.



The "point layer" button is double-clicked after the layer manager is displayed.



Point size is changed.  
(The value range: 0.1-9.9)

[Example of changing point size]

1.0



5.0

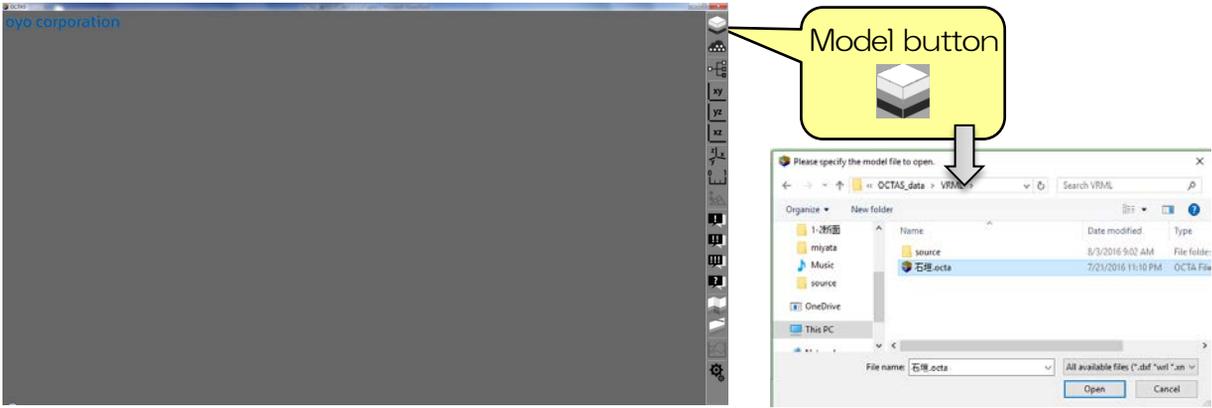


## 2. To observe model

### 2.3 VRML data

◆To display VRML with texture information data

1. The "model" button is clicked and the visualizing data is selected.



2. Model is displayed.



[The loadable file format]  
+ VRML (Ver.2.0)\*

\*Texture files are put in the same directory as VRML files.



## 2. To observe model

### 2. 4 Octa file

- ◆Octa file (extension: .octa) is the file type for integrating some files and loading easily on OCTAS.
- ◆Double-clicking an octa file, OCTAS is activated, and models are displayed.
- ◆A password can be set for each octa file.

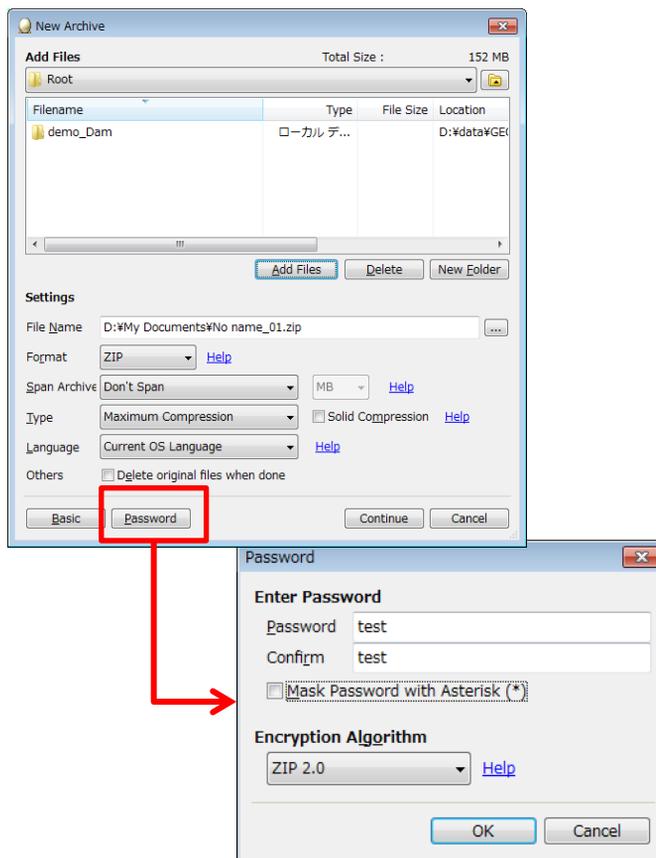
#### 1. To make an octa file

- A set of data files and "data file name".ini are compressed by zip.
- The extension ".zip" compressed data is renamed to ".octa."

This file is the octa file.

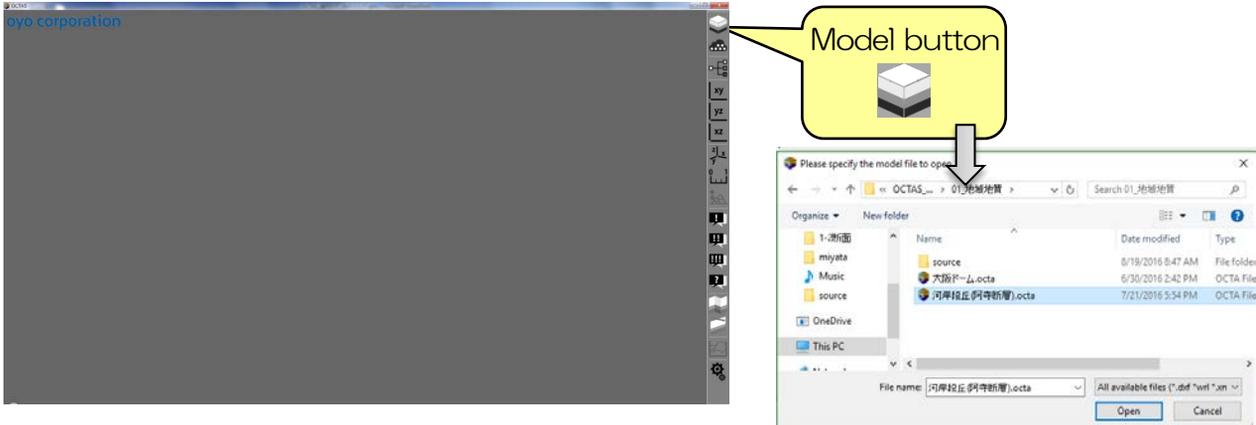
[To make an octa file with password]

+ Zip compression with password tool is used. (The lower figure is an example of free software "ALZip.")

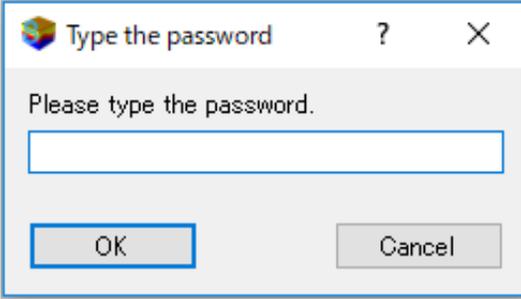


2. To load octa file

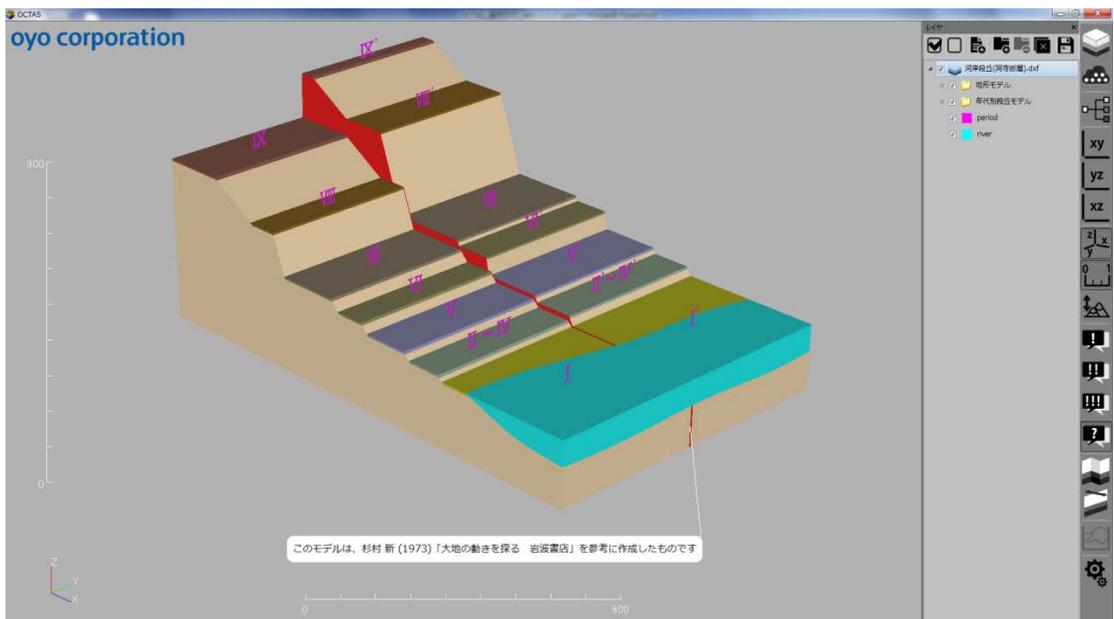
a. An octa file is selected after clicking the "model" button.



b. Password is input when it is requested.



c. Data is displayed.



## 2. To observe model

### 2.5 Model borehole log data

- ◆ To visualize as voxel of model borehole log made in the xml form
- ◆ The large number of model borehole data are recommended making an octa file. \*

[The loadable file format]

- \* Model borehole log of xml type (DTD Ver. 2.1)  
(Ref: [http://www.cals-ed.go.jp/cri\\_dtdxml/](http://www.cals-ed.go.jp/cri_dtdxml/))
- \* Model borehole log.ini

\*Above two kinds of files are in the same folder, an [octa file](#) is made from them and loaded.

[Notices as making model borehole log]

1. So much soil classification can not be visualized, it needs to be concluded to a dozen category.

Ex.) clay, silt, humic clay, silty clay, sandy clay => clay  
 sand, silty sand, coarse sand, fine sand => sand  
 gravel, sandy gravel, silty gravel, pumice => gravel

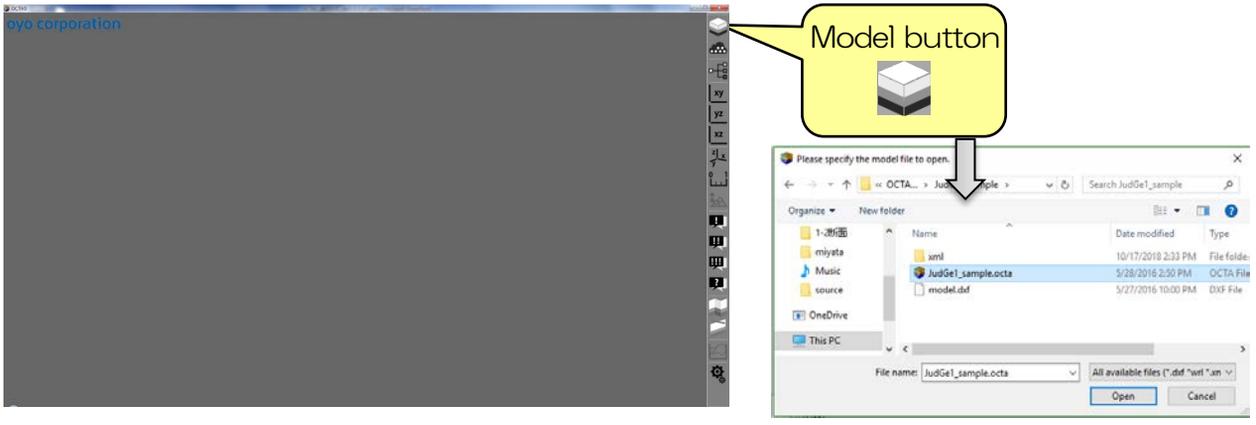
2. "Model borehole log.ini" file is made of concluded soil category.

3. Visualization guideline of number of model borehole log (64 bit)

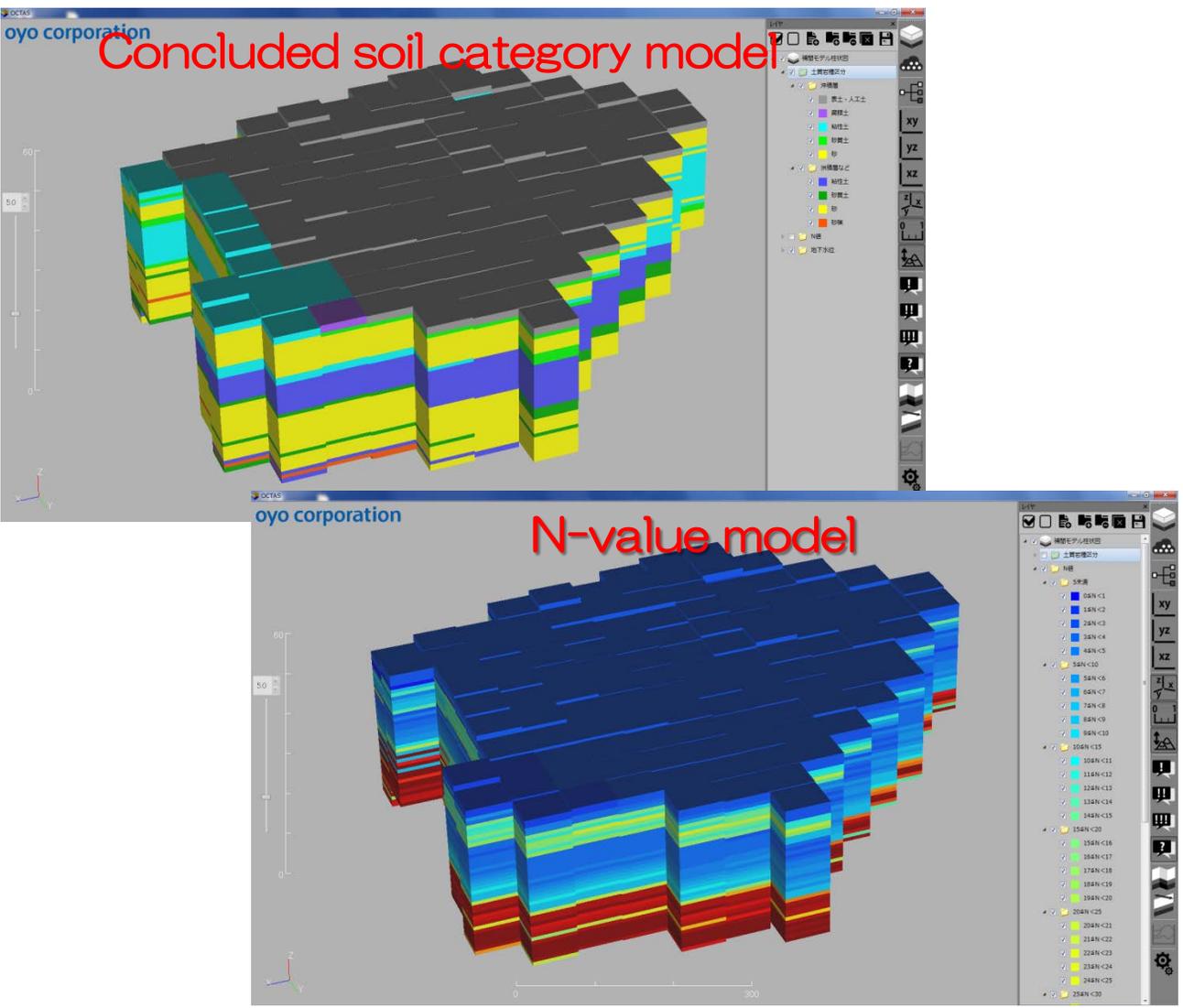
borehole log	Comment	Read time	Memory usage
100	easy	about 1 second	about 200 MB
500	easy	about 20 seconds	about 500 MB
1000	relatively easy	about 10 seconds	about 400 MB
1500	relatively easy	about 20 seconds	about 500 MB
5000	possible	some minutes	about 1.5 GB
10000	Impossible (Not practical as using a large amount of memory)	-	about 3 GB

# 2. 5 Model borehole log data

1. Data is selected by clicking the "model" button.



2. An unit of model borehole logs is displayed.



◆To visualize UCD data of geophysical exploration

[The loadable file format]

+ Geophysical exploration data of UCD (.inp), "Geoplot file name "\_"course line survey information file name".inp

(Data of ini type visualization layer: a file obtained by making layer in OCTAS.)

[Data forming of UCD (.inp) geophysical exploration]

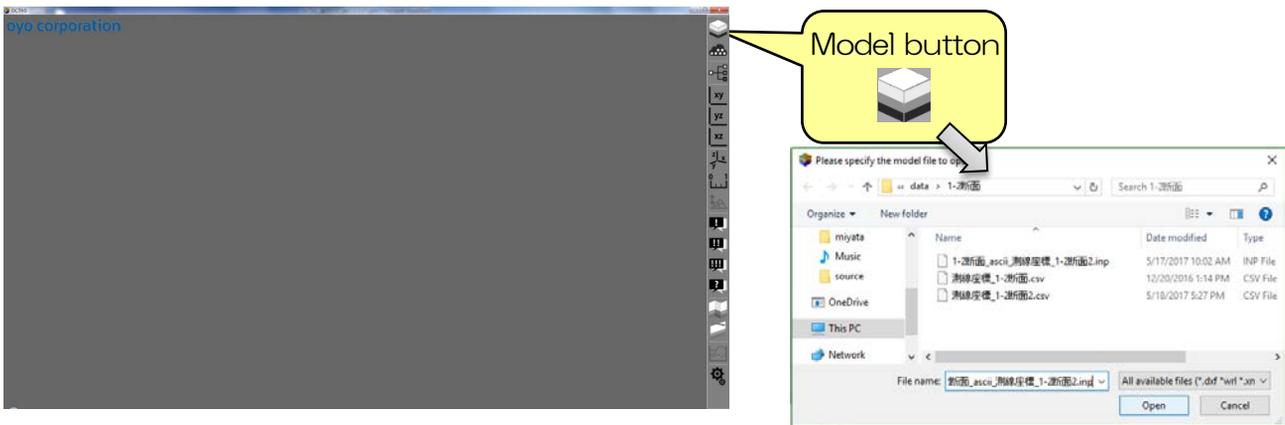
Ref:

[http://vis.lbl.gov/NERSC/Software/express/help6.2/help/reference/dvmac/UCD\\_Form.htm](http://vis.lbl.gov/NERSC/Software/express/help6.2/help/reference/dvmac/UCD_Form.htm)

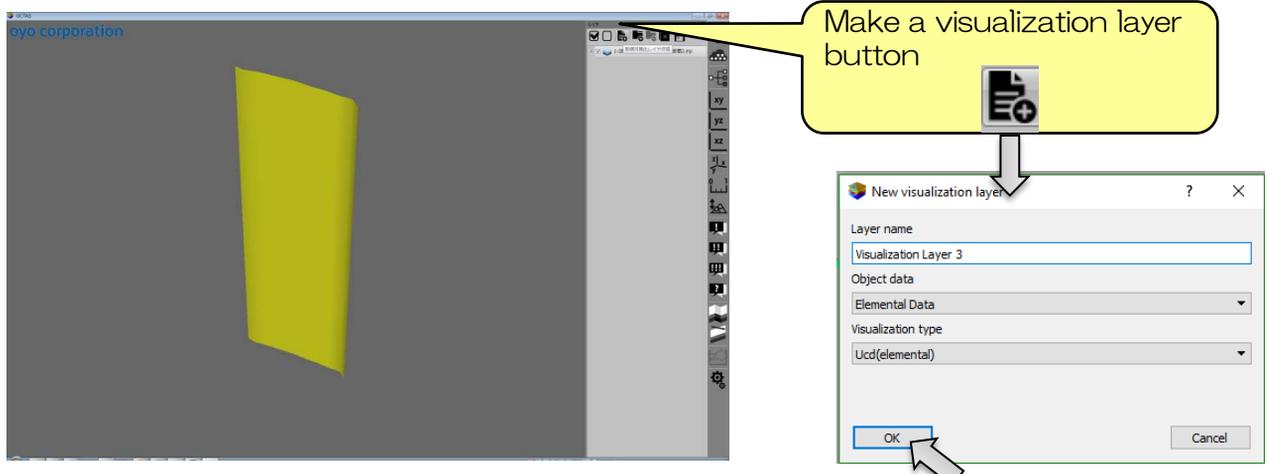
<http://lagrit.lanl.gov/docs/commands/DUMP2.html>

2. 6 Geophysical data

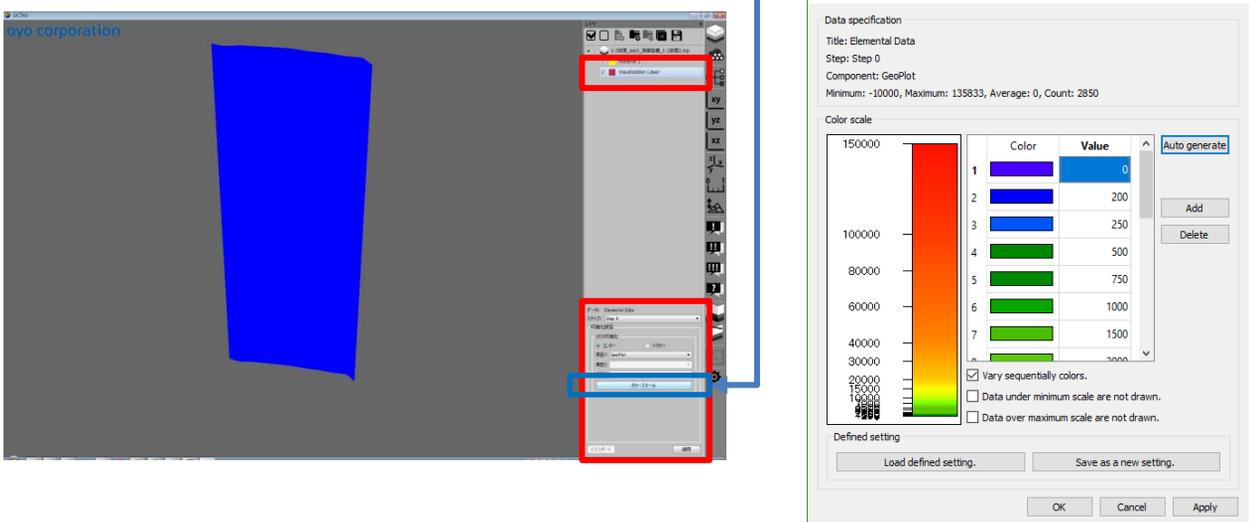
1. UCD data (.inp) is selected by clicking the "model" button.



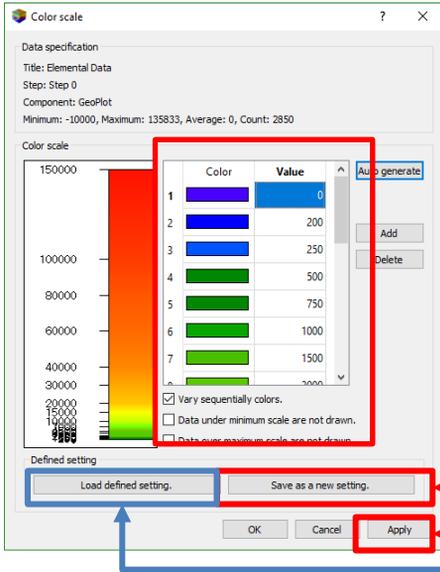
2. The model is visualized.  
 3. The "make a visualization layer" button is clicked after the layer manager is displayed.



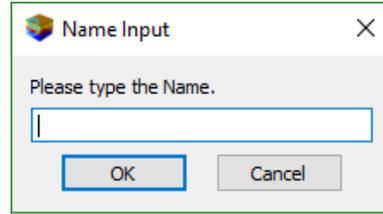
4. Layers and data information are displayed.  
 5. The "color scale" button is clicked.



6. Color scale is adjusted.

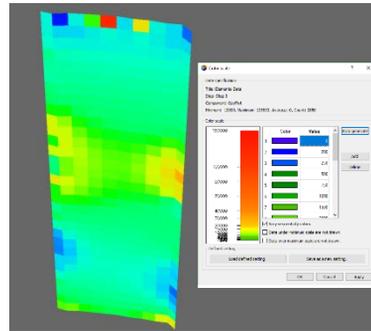


To save adjusted setting, the "save as a new setting" button is clicked and a name is input.



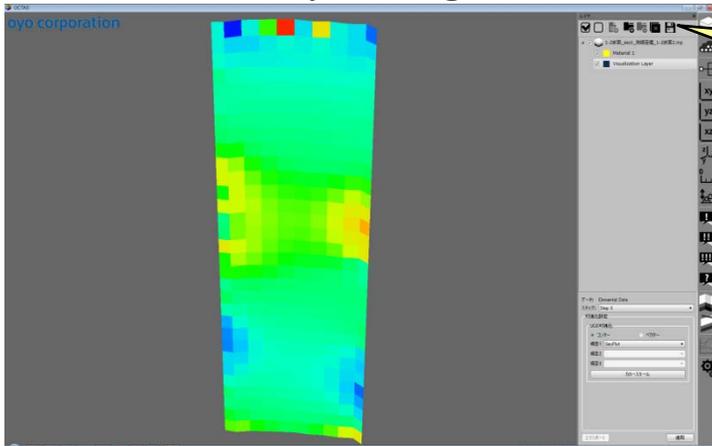
To invoke a saved setting, the "load defined setting" button is clicked.

Clicking the "apply" button, the alteration is reflected to displayed picture.

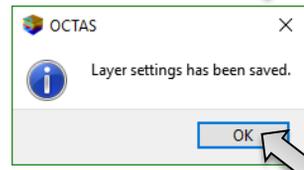
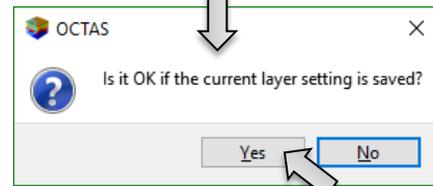


7. "OK."

8. The "save the layer setting" button is clicked.



Save the layer setting button



{ "Geo plot file name" "\_" "course line survey information file name".ini } and { "Geo plot file name" "\_" "course line survey information file name".vis.ini } are made.



◆ To set visualization layer

1. A setting file can arrange an object color scale.

The name of setting file is "inp file name" \_vis.  
The extension is ".ini."

2. Basic scheme of setting files

- + A CSV file
- + Character code: Shift-JIS
- + Linefeed code: CRLF

Parameter name	Parameter number	Setting
Kind of layer	1	A kind of UCD (8: UCD Elemental, 9: UCD Nodal)
Layer name	2	A name of layer
Target data set	3	Unused
Target step number	4	Unused
Reserve	5	Reserve
Visualization item	6	Index of visualization item (starting at 0)
Color scale pattern	7	Color scale pattern (It is used when specify a storage pattern)
Minimum	8	Minimum of color scale. Default is minimum value of data.
Maximum	9	Maximum of color scale. Default is maximum value of data.
Fraction size	10	Maximum of color scale. Default is 10.
Color scale rendering mode	11	Rendering mode of color scale (1: Continuous color (default), 2: solid color)
Rendering under minimum	12	Rendering under minimum (0: not rendering (default), 1: rendering)
Rendering over maximum	13	Rendering over maximum (0: not rendering (default), 1: rendering)
Invalid	14	Invalid
Rendering mode	15	Rendering mode

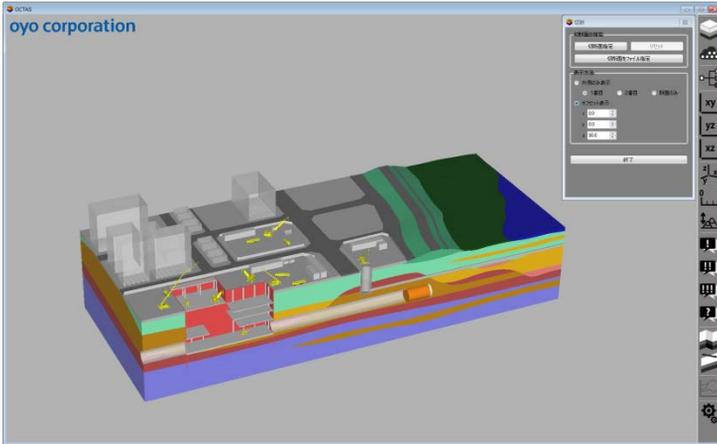
```

1-2断面_ascii_測線座標_1-2断面2_vis.ini - Notepad
File Edit Format View Help
#
# saved at 2017/05/18 16:56:51
#
#8,Visualization Layer,2,0,,1,,200,3000,10,1,1,1,,,,,,,,,,,,,,,,,,,,,
#
# saved at 2017/06/28 17:42:28
    
```

# 3. Applying operation of OCTAS

## 3. 1 Optional section of models

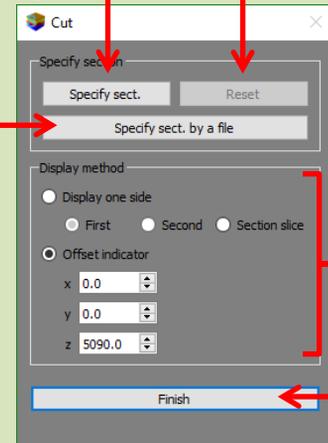
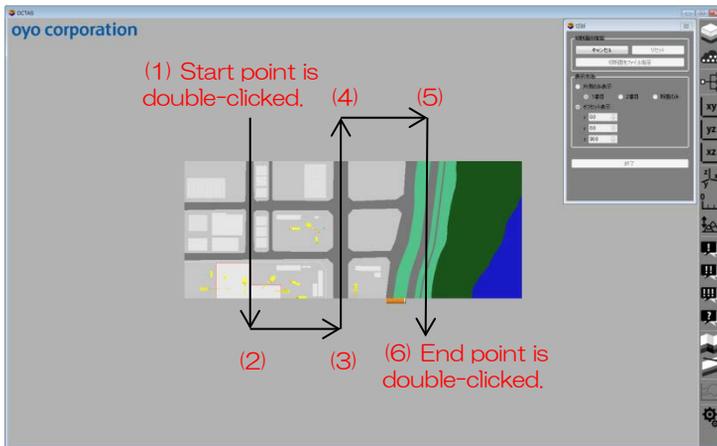
1. The "cut" button is clicked.



Cut button

Cutting position is specified on the viewer.  
To change cutting position.

2. Clicking the button, models from top view is observed.  
Line to cut is drew and the end point is double-clicked.



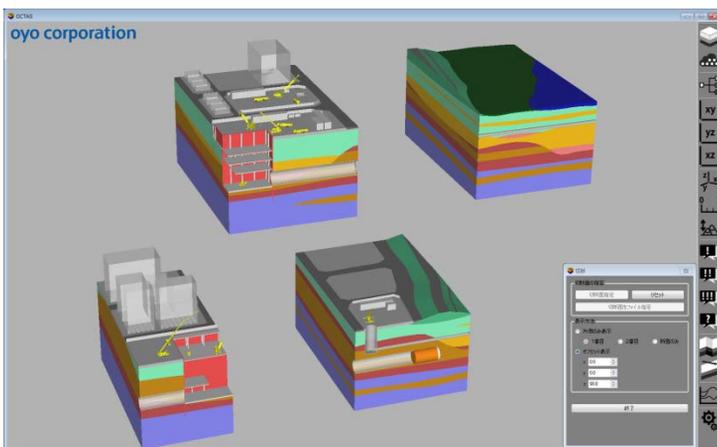
View is adjusted.

Cutting is finished.

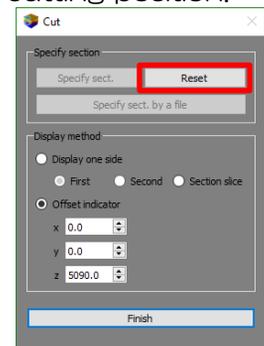
To cut with the coordinate of cutting position file prepared.

[Format of cutting position file]  
+ Comma separated txt files  
+ Two lines of x and y coordinates in the same space as the model.

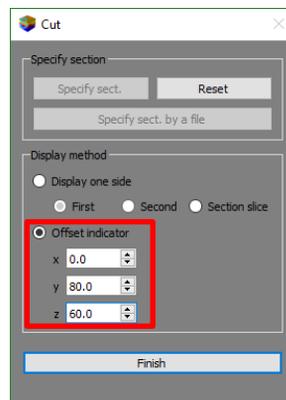
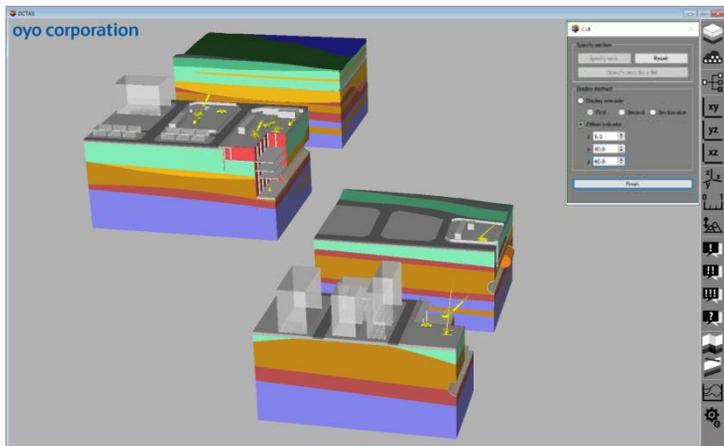
3. A section is displayed.



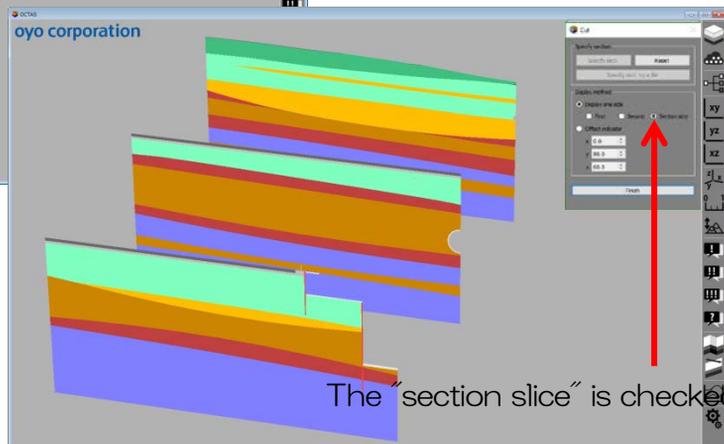
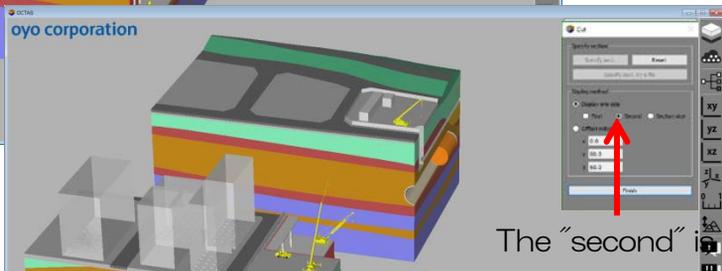
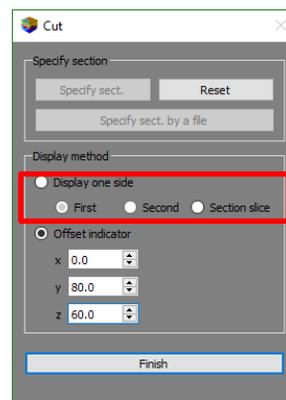
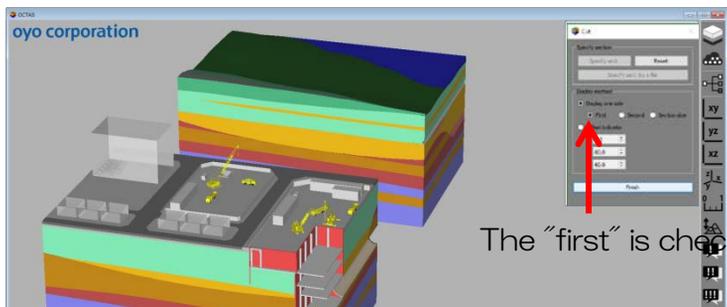
The "reset" button is clicked to change cutting position.



4. The scene can be adjusted by changing offset indicator value or rotating, moving, zooming with the mouse.



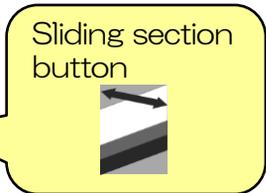
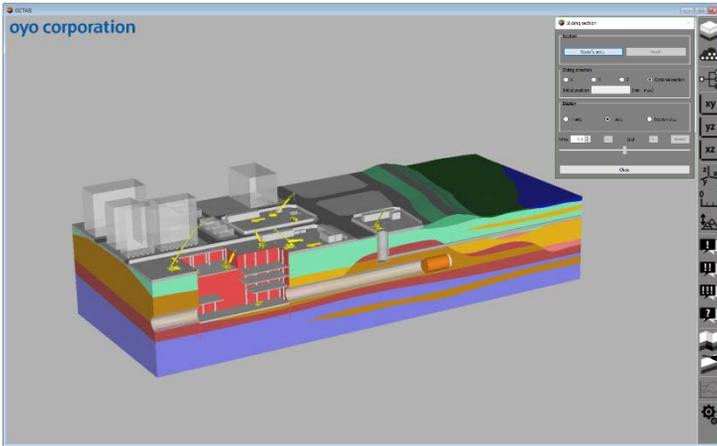
5. Each part section can be observed to check the box "display one side."



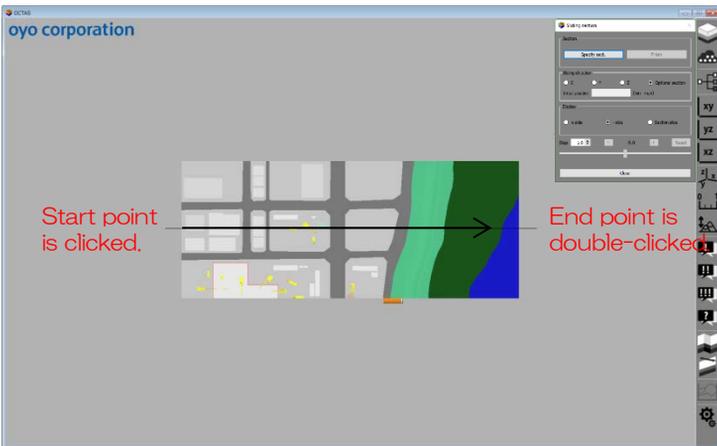
### 3. Applying operation of OCTAS

#### 3. 2 Sliding section of models

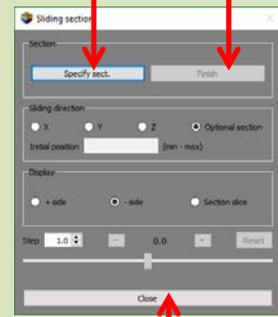
1. The "sliding section" button, then the "specify sect." is clicked.



2. Profile line is drawn, end point is double-clicked.

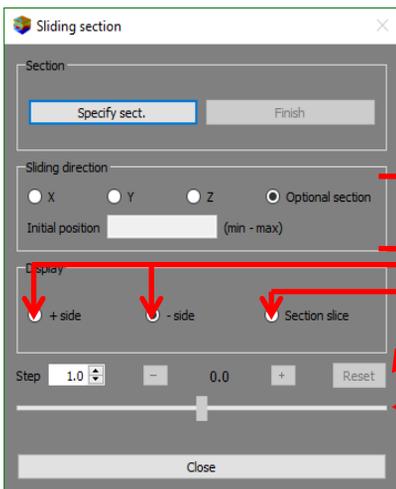


A profile line is specified on the viewer.  
 To change a profile line.



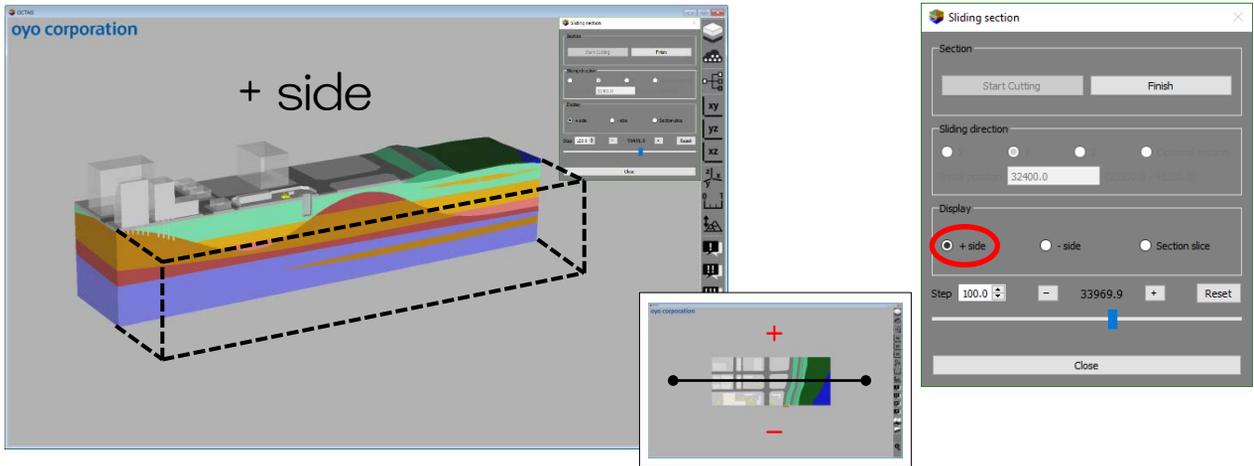
"Sliding section" is finished.

[Details of display adjustment]

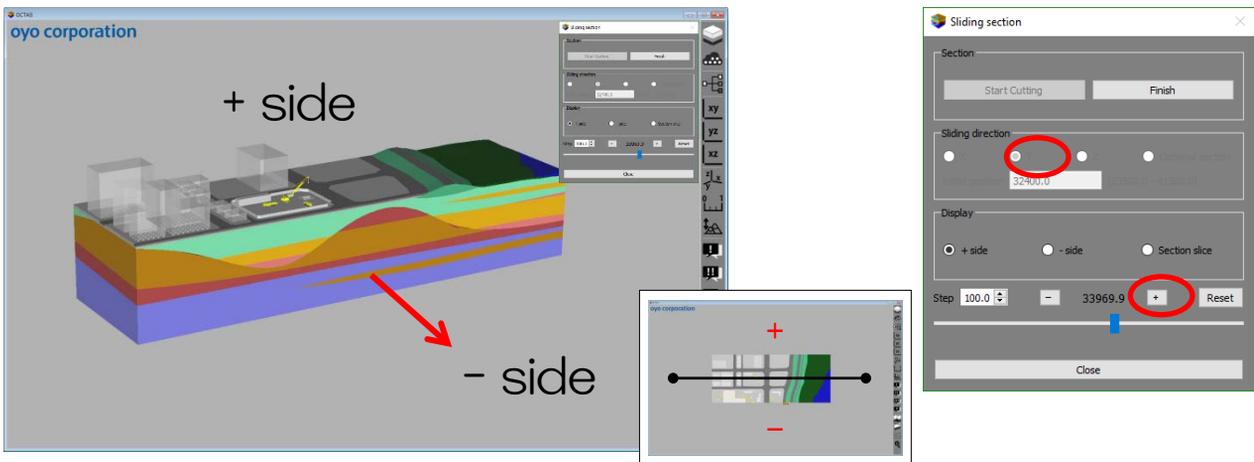


- Sliding direction is specified.
- One of + side or - side of divided model is displayed.
- A section slice of model is displayed.
- Moving pitch is input in the step box, a side of separated model is displayed and changed slightly by clicking + or - button.
- Display of section can be moved as sliding by moving knob.

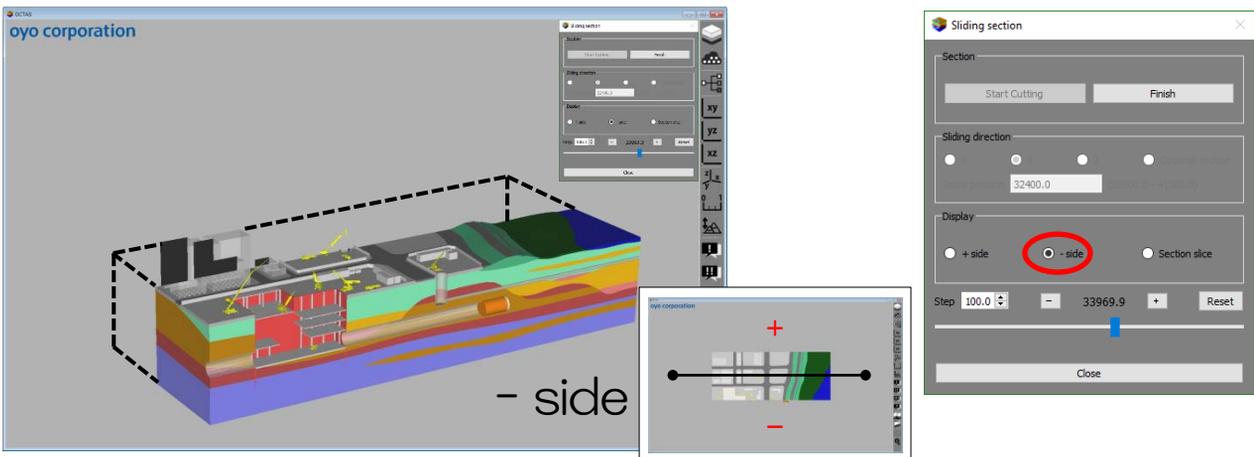
3. A block of + side is displayed by checking “+ side.”



4. The block is slide-displayed as adding - side component by clicking + button.



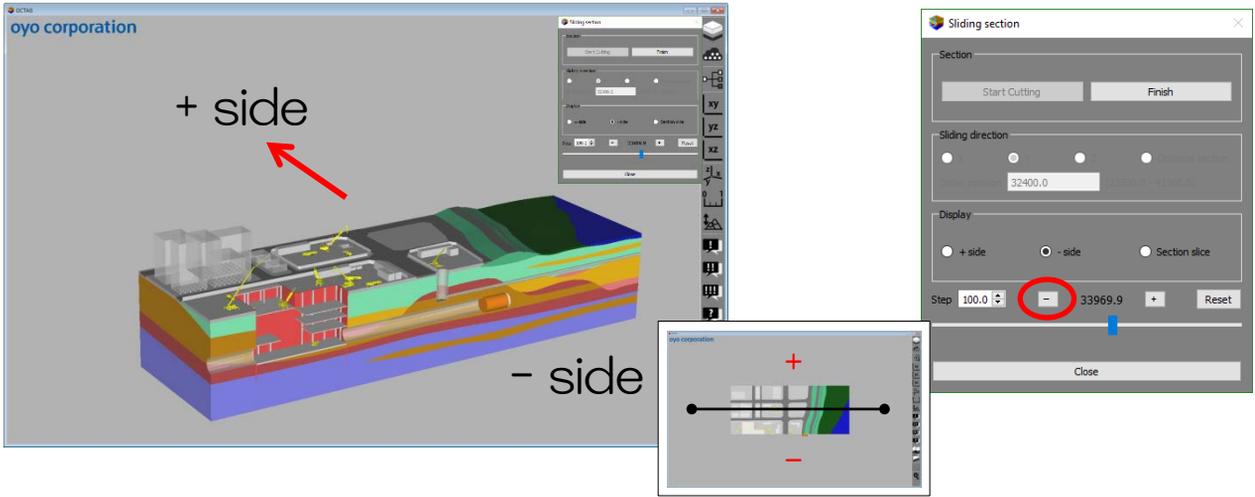
5. A block of - side is displayed by checking “- side.”



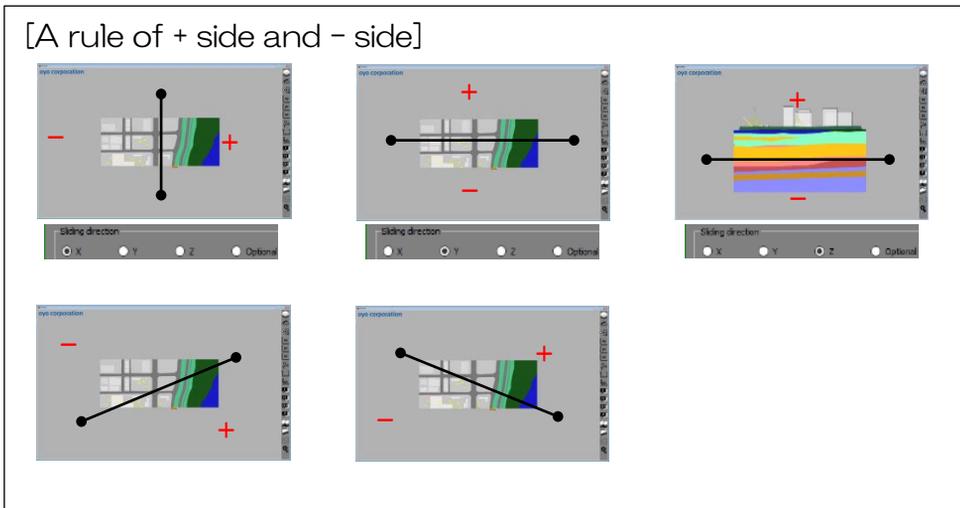
### 3. Applying operation of OCTAS

#### 3. 2 Sliding section of models

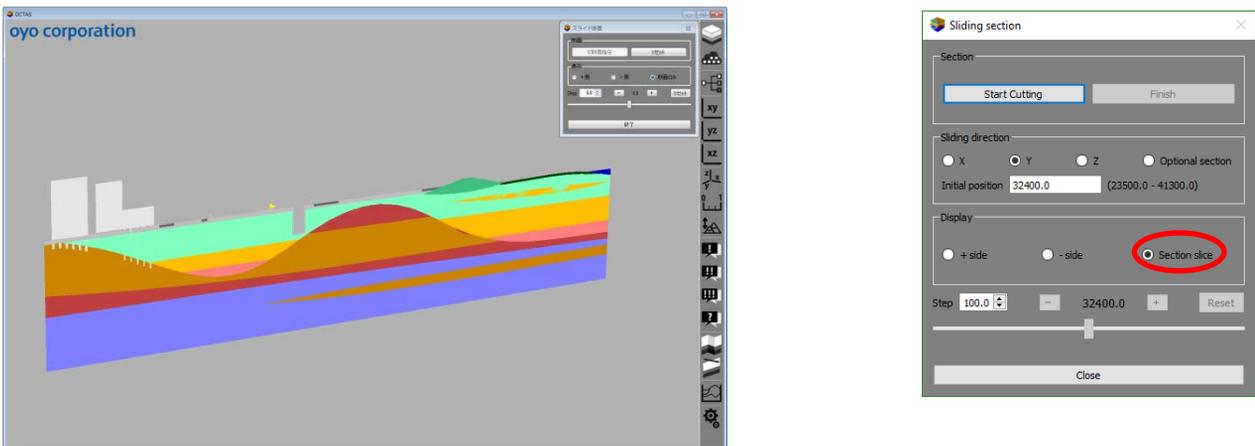
6. The block is slide-displayed as adding + side component by clicking - button.



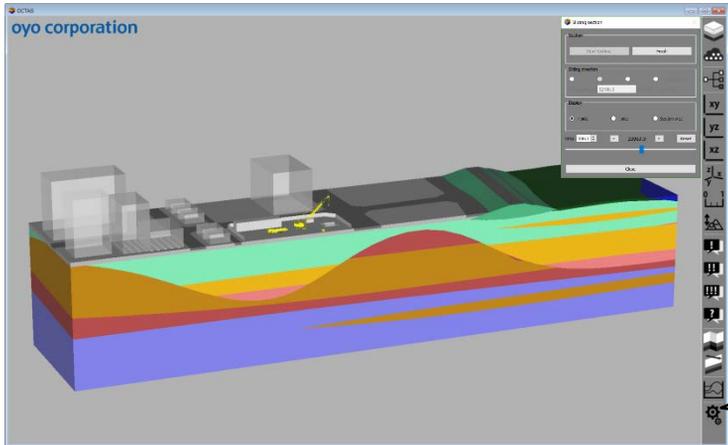
[A rule of + side and - side]



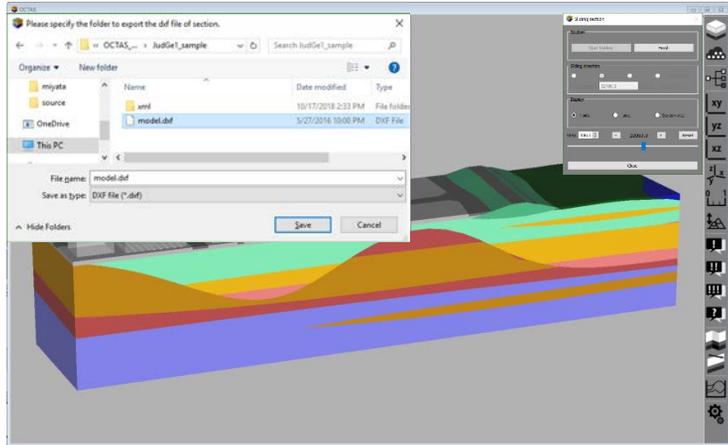
7. A section slice of model is displayed by checking the "section slice" box.



1. Section displayed by "cut" or "sliding section" is exported by clicking the "export dxf" button.

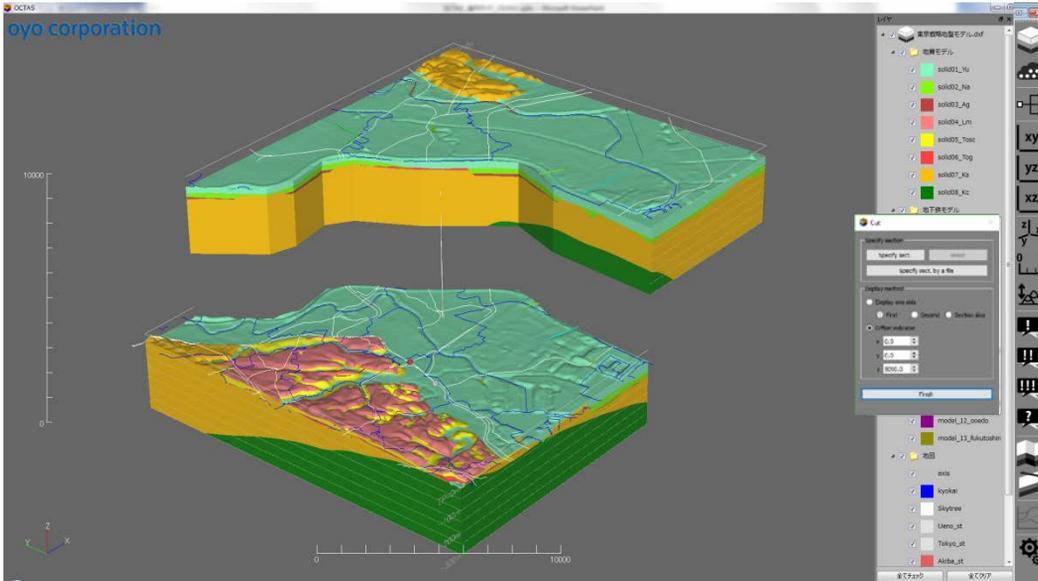


2. Name is input to save.



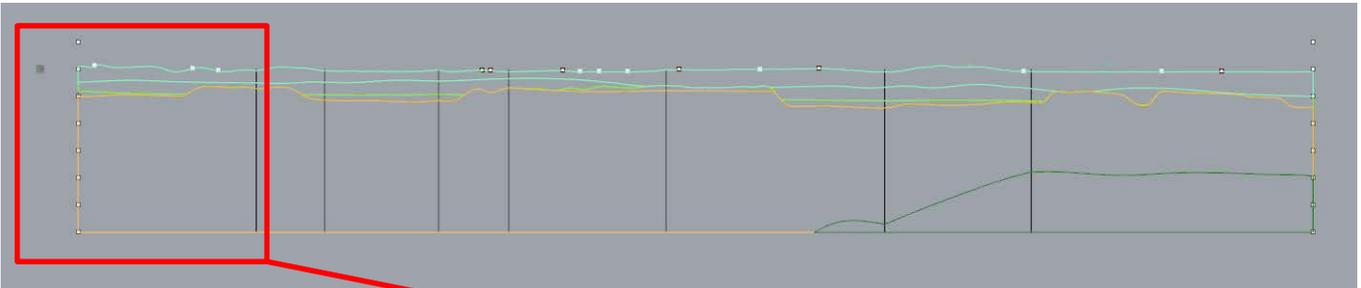
### 3. Applying operation of OCTAS

### 3. 4 Spec. of export sections



Exported section is 2D sectional draw positioning at  $x=0, y=0$  as origin in metric system.

A section loaded in CAD



Enlarged view in the red frame

$X=0, Y=0$

[Correspondence of an OCTAS model and a section]

OCTAS	=>	Sections in CAD
point		nothing
line		point
plane		polyline
closed mesh		closed polyline
inflection point		line
layer name		layer name

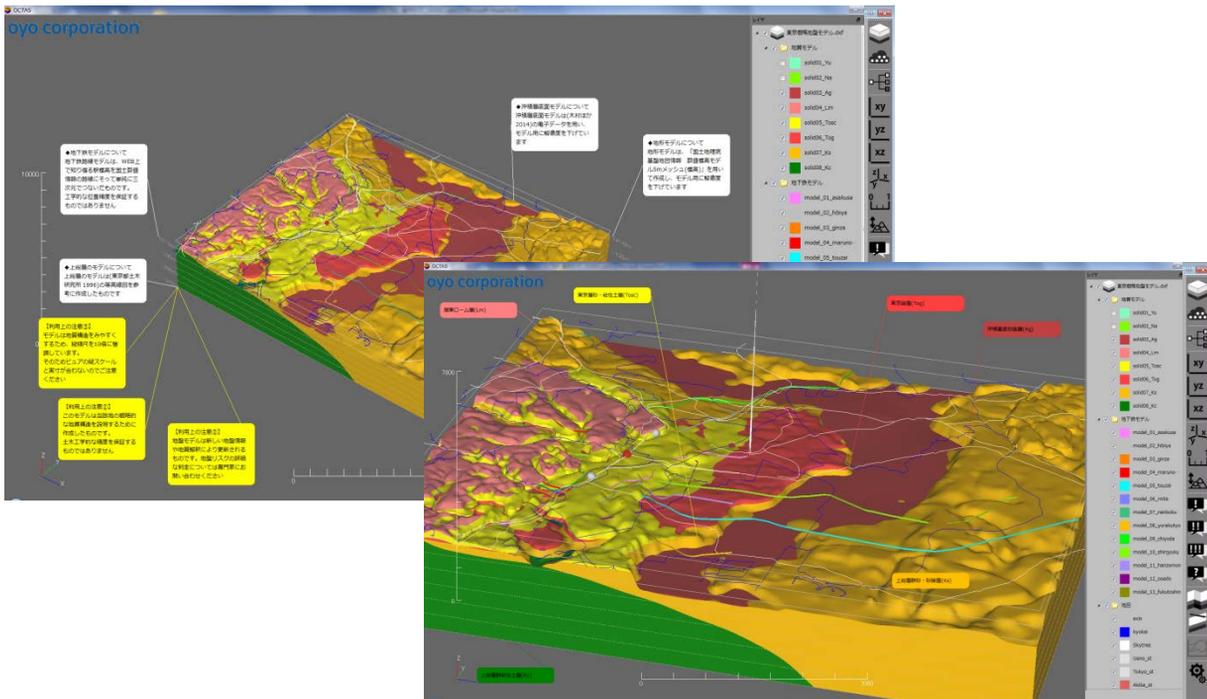
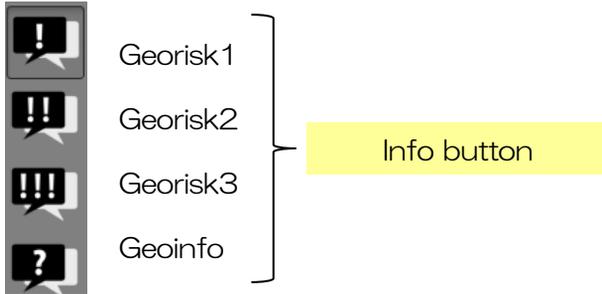


# 3. Applying operation of OCTAS

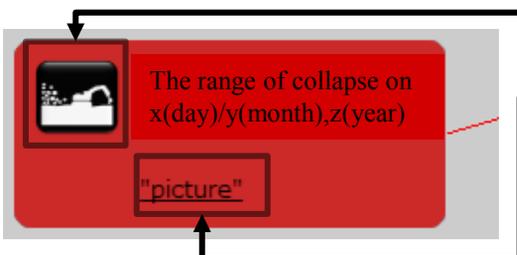
## 3.5 To show information

◆ To display registered information put on a model

- + The "info" button is clicked.  
 (Information is displayed when it is written in an attribute file.)
- + Multi information can be placed in each layer.



Display positions of info boxes can be determined in a setting file.  
 The boxes are moved by left-clicking and dragging.  
 Information is not displayed without displaying its layer.



Icons and links of related files can be pasted in "info box."

◆ A [registered marker](#) can be attached on a model.

+ A marker is moved with the model, because it is joined to the coordinate of model.



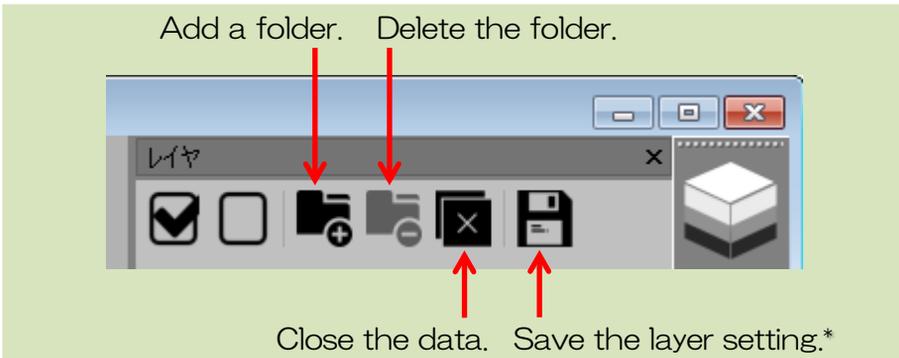
Rotate and expand



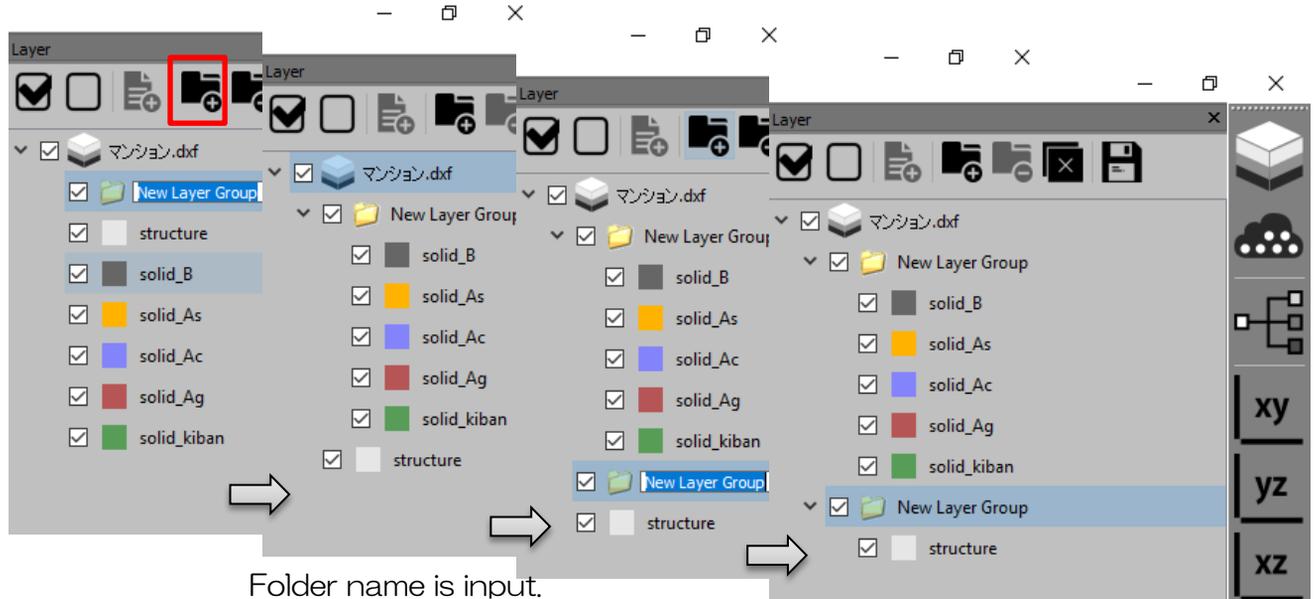


◆The setting file can be made with the layer manager. Available operations with layer manager are following:

- + Creating a new setting file.
- + Correcting and saving\* the file.
- + Setting layer color and transparency.
- + Adding or deleting folders.



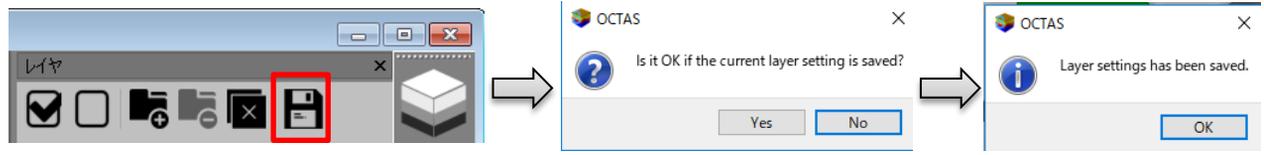
1. To create a folder



Layer can be moved and stored in optional folder by drag and drop.

2. To save the layer setting\*

The setting file having same name as the active data is created.

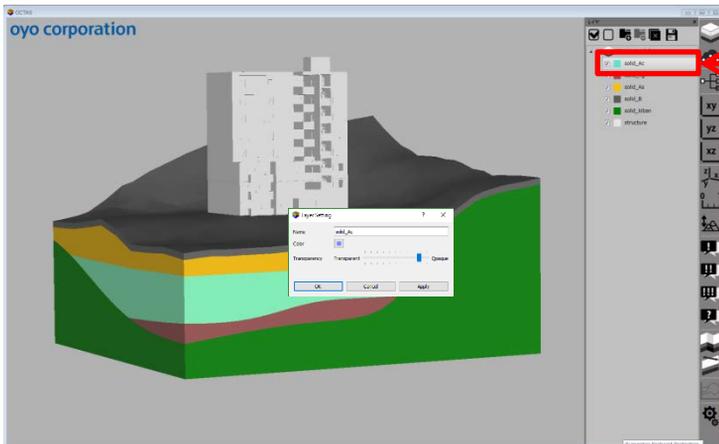


\*Setting of octa file can not be saved.

# 4. Setting files of models

## 4. 2 To make a setting file

### 3. To change layer colors

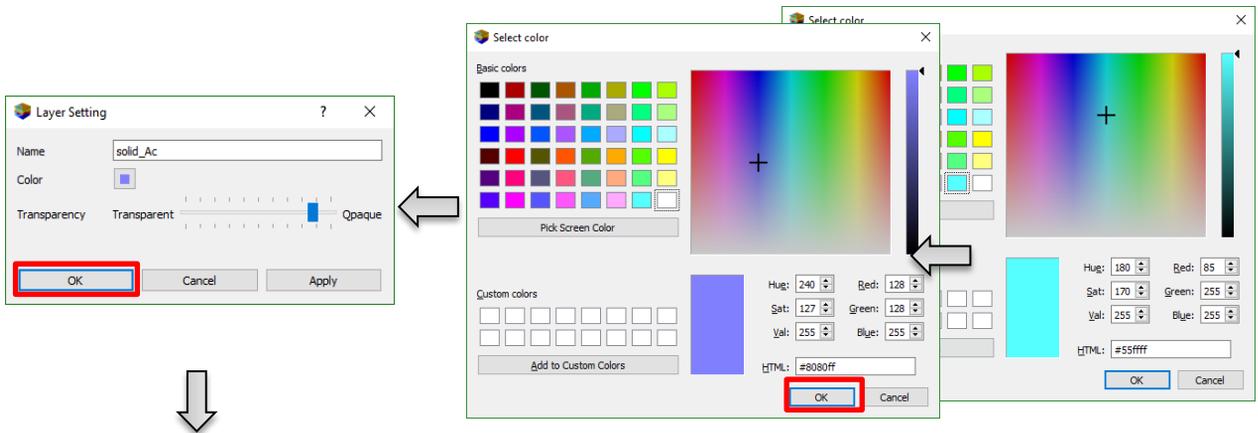


Layer setting is opened by double-clicking on a layer name box.

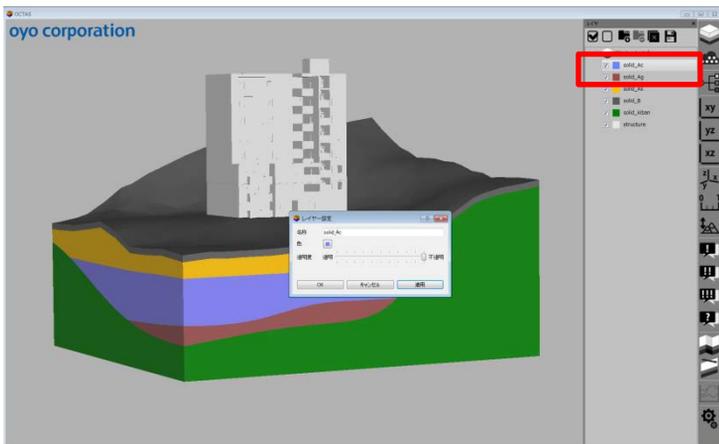


Pallet is opened by clicking the color button.

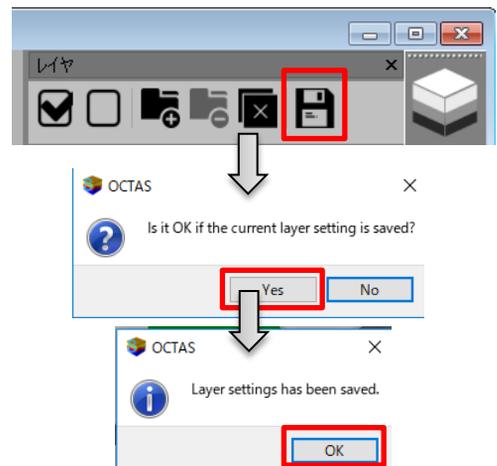
Layer (object) color is changed.



Color change is reflected.



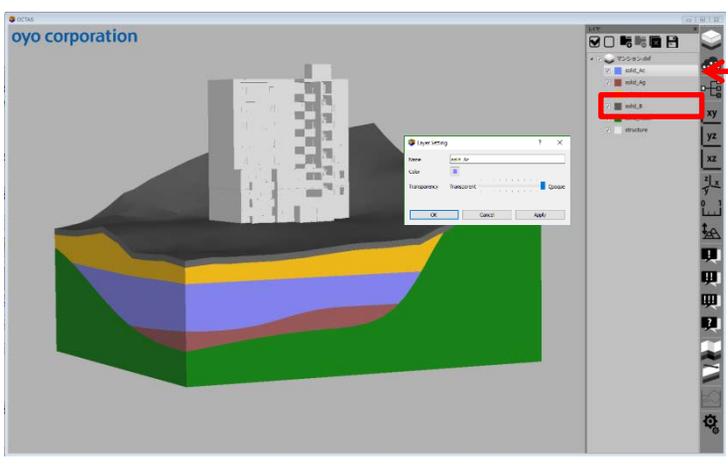
The "save the layer setting" is clicked.



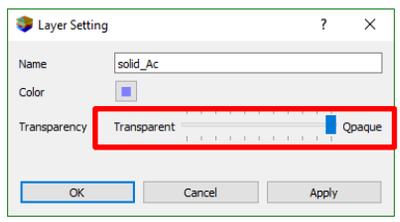
\*Setting of octa file can not be saved.

Existing setting file is overwritten and saved.\*

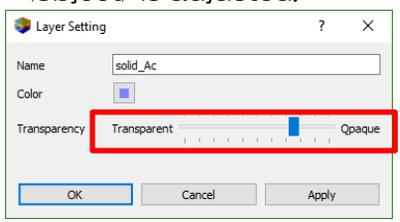
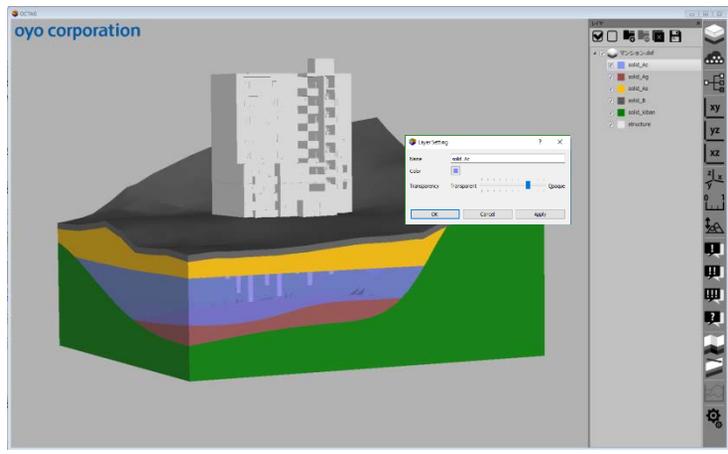
4. To adjust transparency of layer



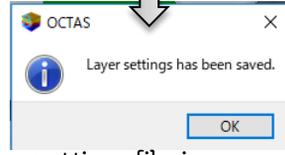
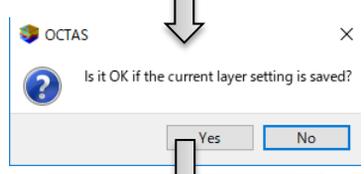
Layer setting is opened by double-clicking on a layer name box.



Transparency of layer (object) is adjusted.



The "save the layer setting"\* is clicked.



Existing setting file is overwritten and saved.\*

\*Setting of octa file can not be saved.

## Data category: 0

\* A set of category number "0", a key name and a setting value is described as comma separated in one line per item.

\* All the key names and the setting values are single-byte alphanumeric characters.

\* It doesn't need describe which item is default.

Key name	Default value	Setting
ProjectionMode	1	Projection mode (0: parallel projection, 1: perspective)
RenderingMode	0	Rendering mode (0: smooth, 1: flat, 2: wireframe)
LightDirection	8	Light direction (0: N, 1: NE, 2: E, 3: SE, 4: S, 5: SW, 6: W, 7: NW, 8: top)
LightElevation	45	An angle of elevation of light source (unit: degree)
LightSpecular	1.0,1.0,1.0	Light-source color RGB color components: 0.0-1.0, 0.0-1.0, 0.0-1.0
LightAmbient	0.2,0.2,0.2	Ambient light color RGB color components: 0.0-1.0, 0.0-1.0, 0.0-1.0
RotateButton	1	Mouse button for rotation (1: left mouse button, 2: right mouse button)
RotateModifier	0	Rotate modifier (0: none, 1: Shift, 2: Ctrl, 3: Alt)
MoveButton	2	Mouse button for moving (1: left mouse button, 2: right mouse button)
MoveModifier	0	Move modifier (0: none, 1: Shift, 2: Ctrl, 3: Alt)
RotateMode	1	Rotate mode 0: Trackball (Rotating like a trackball by mouse moving.) 1: Transit (Rotating as if there were a horizontal rotating shaft.)
WheelDirection	1	Direction of mouse scroll wheel to zoom up (1: back to front, -1: front to back)
InfoBoxWidth	200	Standard width of info box (unit: pixel) Caution) Box width is sometimes bigger than input value because of word-wrapping.
Info BoxIconWidth	48	Icon standard width of info box (unit: pixel) Notice) The width of icon is included in the info box. So, when icon display is ON without info box width changing, the width of text become smaller.

Data category: 0

Key name	Default value	Setting
CameraFocalLength	-1	Focal length of camera It is set as 10% of model characteristic length (the sum of three bounding box sides) by specifying as "-1".
PointCloudPointSize	1.5	Point size of point cloud
PointCloudAlwaysTop	0	Is point cloud always displayed forefront? (0: No, 1: Yes)
ModelEnableLayerOffset	0	Is the layer displayed offsetting slightly? (0: No, 1: Yes) Minute offset reduces flicker while some layers have the same surfaces.
BackgroundColor	0.4,0.4,0.4	Back ground color of viewer RGB color components: 0.0-1.0, 0.0-1.0, 0.0-1.0
AxisColor	1.0,1.0,1.0	Color of axis and axis labels RGB color components: 0.0-1.0, 0.0-1.0, 0.0-1.0
HorizontalScaleColor	1.0,1.0,1.0	Color of horizontal scale RGB color components: 0.0-1.0, 0.0-1.0, 0.0-1.0
HorizontalScaleLabelColor	1.0,1.0,1.0	Color of horizontal scale label RGB color components: 0.0-1.0, 0.0-1.0, 0.0-1.0
VerticalScaleColor	1.0,1.0,1.0	Color of vertical scale RGB color components: 0.0-1.0, 0.0-1.0, 0.0-1.0
VerticalScaleLabelColor	1.0,1.0,1.0	Color of vertical scale label RGB color components: 0.0-1.0, 0.0-1.0, 0.0-1.0
XAxisColor	0.0,0.0,1.0	Color of x axis RGB color components: 0.0-1.0, 0.0-1.0, 0.0-1.0
XAxisLabelColor	1.0,1.0,1.0	Color of x axis label RGB color components: 0.0-1.0, 0.0-1.0, 0.0-1.0
YAxisColor	0.0,1.0,0.0	Color of y axis RGB color components: 0.0-1.0, 0.0-1.0, 0.0-1.0
YAxisLabelColor	1.0,1.0,1.0	Color of y axis label RGB color components: 0.0-1.0, 0.0-1.0, 0.0-1.0
ZAxisColor	1.0,0.0,0.0	Color of z axis RGB color components: 0.0-1.0, 0.0-1.0, 0.0-1.0
ZAxisLabelColor	1.0,1.0,1.0	Color of z axis label RGB color components: 0.0-1.0, 0.0-1.0, 0.0-1.0

## Data category: 0

Key name	Default value	Setting
AxisVisibility	0	Initial display of axes (0: off, 1:on)
ScaleVisibility	0	Initial display of scales (0: off, 1:on)
GeoRisk1Visibility	0	Initial display of georisk 1 (0: off, 1:on)
GeoRisk2Visibility	0	Initial display of georisk 2 (0: off, 1:on)
GeoRisk3Visibility	0	Initial display of georisk 3 (0: off, 1:on)
GeoInfoVisibility	0	Initial display of geoinfo (0: off, 1:on)

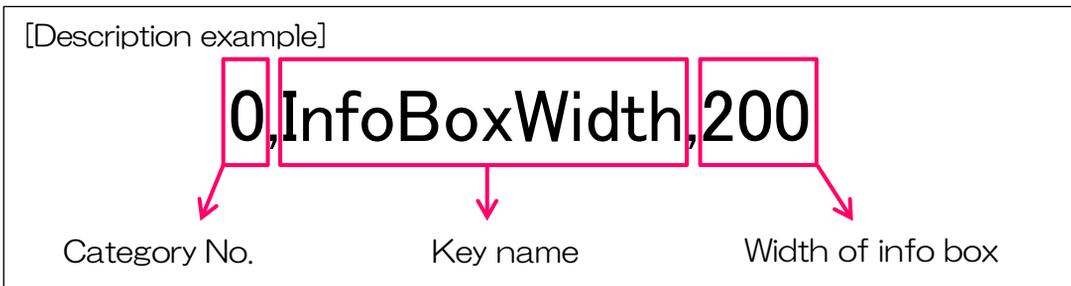
\* A case-insensitive

\* The axes and the scale remain displayed when a model is loaded, in spite of this setting.

\* Information remains displayed when a model is loaded without initial displays are "ON."

\* Only one level of information is displayed at once. When several levels are described to display, the actual initial-displayed level is determined as following priority.

Geoinfo > Georisk 3 > Georisk 2 > Georisk 1



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4. Setting files of models

4. 3 Basic scheme

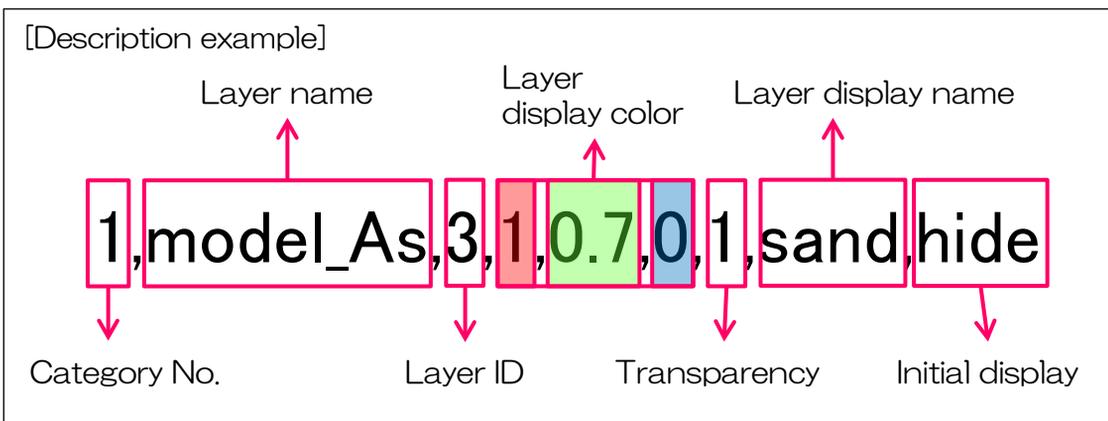
Data category: 0

## 4. 4 Layer display setting

## Data category:1

- \* A set of category number "1", a layer name and setting values of following table is described as comma separated in one line per layer.
- \* The layer names are double-byte or single-byte alphanumeric characters. Others are single-byte alphanumeric characters.

Setting item	Content
Category No.	"1" is written.
Layer name	Layer name of setting (When a file is dxf, the layer name has to coincide completely with the name in dxf.)
Layer ID	Freely-selected positive integer is determined to identify a layer. It has to be unique in the layers.
Layer display color(R)	R color components: 0.0-1.0
Layer display color(G)	G color components: 0.0-1.0
Layer display color(B)	B color components: 0.0-1.0
Transparency	Transparency of layer: 0.0-1.0 (0: transparent, 1: opaque)
Layer display name	Layer name written here is displayed on OCTAS. ("Layer name" is displayed when layer display name is determined.) It can be different from the layer name.
Initial display	When the layer is off-displayed in the initial state, "hide" is written.



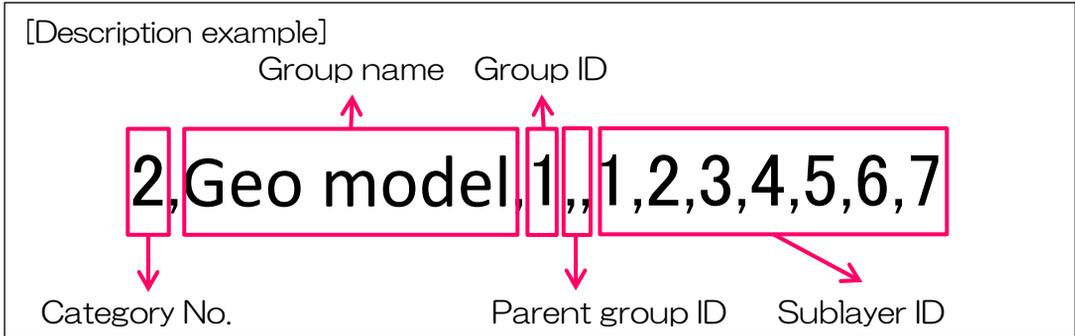
# 4. 5 Layer group information

## Data category: 2

- + A set of category number "2", a group names and setting values of following table is described as comma separated in one line per layer.
- + The group names are double-byte or single-byte alphanumeric characters. Others are single-byte alphanumeric characters.

Setting item	Content
Category No.	"2" is written.
Group name	<b>Name of group</b> It needs unique in the groups and different from any other layer name.
Group ID	Freely-selected positive integer is determined to identify group. It has to be unique in the groups.
Parent group ID	When the group is subordinate to another group, the parent group ID is written. Without the description, it is treated as a group of the most significant position.
Sublayer ID	ID numbers of layers belonging to this group are described as comma separated.
Initial display	When the group is off-displayed in the initial state, "hide" is written. When the group is off-display, the subordinate layers are all off-display. ("Hide" is unnecessary to write in initial display of layer setting lines.)

\*Each layer out of groups is treated as single and the most significant position.



```

Subsurf_plain.ini - Notepad
File Edit Format View Help
1,model_B,1,0.75,0.75,0.75,1
1,model_Ac,2,0.5,1,0.75,1
1,model_As,3,1,0.75,0,1
1,model_Ag,4,1,0.5,0.5,1
1,model_Dc,5,0.5,0.5,1,1
1,model_Ds,6,0.8,0.52,0,1
1,model_Dg,7,0.75,0.25,0.25,1

1,model_River,8,0,0.25,0,1
1,model_Water,9,0,0,0.75,1

1,model_field1_road,10,0.41,0.41,0.41,1
1,model_field1_teibo,11,0.25,0.75,0.5,1
    
```

4. Setting files of models

4. 6 Layer information setting

Data category: 3

\* A set of category number "3", a layer name and setting values of contents in following table is described as comma separated in one line per information.

\* The layer names and the information contents and the font names are double-byte or single-byte alphanumeric characters. Others are single-byte alphanumeric characters.

Setting item	Content
Category No.	"3" is written.
Layer name	Layer name of setting. (The layer name has to coincide completely with the name in dxf.) Or group name of setting. (The group name has to coincide completely with the name of group setting.)
Information section	Information level is selected from 1 to 4. 1: georisk1, 2: georisk2, 3: georisk3, 4: geoinfo
Information contents	Information texts are written. Commas or single-byte double quotes are described as following. Text is enclosed within single-byte double quotes. Double quotes in text are duplexed. " n" is the line feed code. Actual line fed text is disapproved.
Font	Font is written.
Font size	Font size is written.
Font color (R)	R color components of text: 0.0-1.0
Font color (G)	G color components of text: 0.0-1.0
Font color (B)	B color components of text: 0.0-1.0
Background color (R)	R color components of info box: 0.0-1.0
Background color (G)	G color components of info box: 0.0-1.0
Background color (B)	B color components of info box: 0.0-1.0
Background color (α)	Transparency of info box: 0.0-1.0 (0: transparent, 1: opaque)
Icon	Icon number is selected. (Ref.: icon table after next page) No icon is displayed without writing here. (Default)
Relevant file name	Relevant file name (or absolute path to relevant file). When no absolute path is described, the file is in the same folder as the data file. (*Relevant file is kept off an octa file in this version.)
Display name of relevant file	Display name of relevant file in info box. The file name is displayed if the display name is unspecified.
Reference position	Reference position of the info box is selected (from the four corner of viewer). 1: upper-left, 2: lower-left, 3: upper-right, 4: lower-right Selecting reference position, following XY have to be written. The position is automatically decided without selecting reference position. No XY is need to write.
X	The x component of distance (pixels) from the reference position to the info box.
Y	The y component of distance (pixels) from the reference position to the info box.

\*Information is not displayed when corresponding layer is off displayed.

## 4. 6 Layer information setting

Setting item	Content
Info box width	(Expanding in future.) The width of info box is designated for each. Not designating, the width is default value (InfoBoxWidth).
Info box shape	(Expanding in future.)
Leader line	(Expanding in future.) 1: There are leader lines. (default) 0: There are not leader lines.

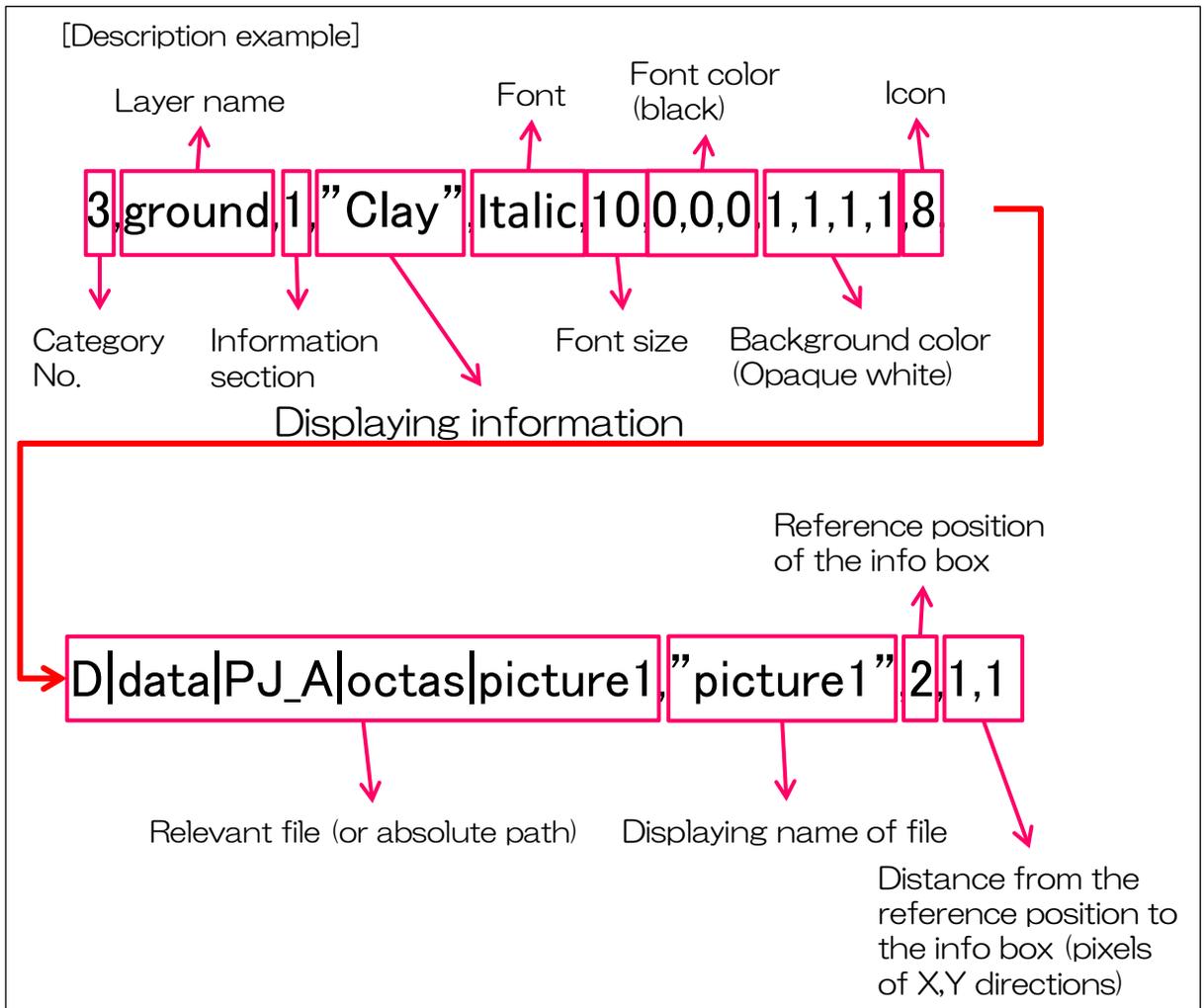
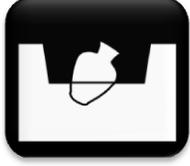


Table of information icon

No.	Icon	No.	Icon	No.	Icon
1		2		3	
4		5		6	
7		8		9	
10		11		12	
13		14		15	
16					
101		102		103	
104					

1. Ground collapse
2. Swelling  
Heaving
3. Non-rippable\*
4. Ruins
5. Ground deformation
6. Liquefaction
7. Gas
8. Buried objects
9. Differential settlement
10. Boiling
11. Health damage
12. Sediment disaster
13. Subsidence
14. Becoming muddy
15. Pollution
16. Inundation

\*: By ripping with 32 ton-class crawler dozer. Seismic wave velocity of natural ground is not more than about 2000 m/s.

101. Adobe Acrobat (pdf)
102. Microsoft Excel
103. Microsoft Word
104. OCTAS

Data category: 4

- + A set of category number "4", a key name and a setting value is described as comma separated in one line per item.
- + All the key names and the setting values are single-byte alphanumeric characters.
- + It doesn't need describe which item is default.

Setting item	Content
Category No.	"4" is written.
Setting item key	Key name of setting item
Setting item value	Value of setting item

Key name	Default value	Setting
SwitchXY	0	Whether or not to switch XY ? 0: Not switch (Cartesian coordinate) 1: Switch (survey coordinate*1) <b>**This setting is used by point cloud data.</b>
OriginalCoordinate	0	Coordinate system of original data 0: Latitude/Longitude 1: UTM 2: Japan Plane Rectangular CS
OriginalDatum	0	Geodetic system of original data 0: World geodetic system (ITRF94) 1: Japanese geodetic system (Tokyo Datum)
OriginalCoordinateNo		Zone number of coordinate of original data UTM: 51-56 The rectangular plane of Japan: 1-19 None in latitude/longitude
DisplayCoordinate	0	Coordinate system of displaying (switched) data 0: Latitude/Longitude 1: UTM 2: Japan Plane Rectangular CS
DisplayDatum	0	Geodetic system of displaying (switched) data 0: World geodetic system (ITRF94) 1: Japanese geodetic system (Tokyo Datum)
DisplayCoordinateNo		Zone number of coordinate of displaying (switched) data UTM: 51-56 The rectangular plane of Japan: 1-19 None in latitude/longitude

\*1: Japanese survey coordinate: x-axis represents north, y-axis represents east.

The unit of each coordinate

Coordinate system	Coordinate unit
Latitude/Longitude	Degree, °
UTM	m
Japan Plane Rectangular CS	m

## 4. 8 Model borehole log setting

## Data category: 5

\* A set of category number "5", a key name and a setting value is described as comma separated in one line per item.

\* All the key names and the setting values are single-byte alphanumeric characters. It doesn't need describe which item is default.

Setting item	Content
Category No.	"5" is written.
Setting item key	Key name of setting item
Setting item value	Value of setting item

Key name	Default value	Setting
<b>MeshSize</b>	<b>50</b>	<b>Mesh size of model borehole log</b> <b>A value is selected from 5, 10, 50, 250, 500, -1</b> <b>Actual sizes are following.</b> 500: Dividing a *secondary area partition into 400 (20 by 20) equal parts towards longitude and latitude. (Approx. 500 m grid) 250: Dividing a secondary area partition into 1600 (40 by 40) equal parts towards longitude and latitude. (Approx. 250 m grid) 50: Dividing a secondary area partition into 40000 (200 by 200) equal parts towards longitude and latitude. (Approx. 50 m grid) 10: Dividing a secondary area partition into $1 \times 10^6$ (1000 by 1000) equal parts towards longitude and latitude. (Approx. 10 m grid) 5: Dividing a secondary area partition into $4 \times 10^6$ (2000 by 2000) equal parts towards longitude and latitude. (Approx. 5 m grid) -1: Optional designation. MeshWidth and MeshHeight should be designated.
<b>ModelName</b>	<b>Model borehole log</b>	<b>Display name of data is designated.</b>
<b>MeshWidth</b>		<b>X component of mesh is designated. (Unit: m)</b> <b>(When "MeshSize" is -1.)</b>
<b>MeshHeight</b>		<b>Y component of mesh is designated. (Unit: m)</b> <b>(When "MeshSize" is -1.)</b>
<b>N_Min</b>	<b>1</b>	<b>Minimum of N-value layer</b>
<b>N_Max</b>	<b>50</b>	<b>Maximum of N-value layer</b>
<b>N_Step</b>	<b>5</b>	<b>Pitch of N-value layer</b>
<b>N_NoValue</b>	<b>-9999</b>	<b>Value as no N-value</b>
<b>N_OverMax_Enabled</b>	<b>0</b>	<b>1: Layer for more than maximum of N-value is arranged.</b> <b>0: Layer for more than maximum of N-value is not arranged.</b>
<b>N_UnderMin_Enabled</b>	<b>0</b>	<b>1: Layer for less than minimum of N-value is arranged.</b> <b>0: Layer for less than minimum of N-value is not arranged.</b>
<b>N_NoValue_Enabled</b>	<b>0</b>	<b>1: Layer for no value is arranged.</b> <b>0: Layer for no value layer is not arranged.</b>

\*Secondary area partition: Refer to HP of Ministry of Internal Affairs and Communications Statistics Bureau.  
<http://www.stat.go.jp/english/data/mesh/05.htm>

## Example of "model borehole log.ini" file setting

- ◆ "Model borehole log.ini" file is put in the same folder as xml data.  
The name of ini file is fixed.

```

ファイル(F) 編集(E) 書式(O) 表示(V) ヘルプ(H)
1.表土・人工土,1.0,5.0,5.0,5.1,表土・人工土
1.腐植土(A),2.0,7.0,3.1,1.1,腐植土
1.泥(A),3.0,0.1,0.1,0.1,粘性土
1.砂質土(A),4.0,1.0,1.0,1.0,砂質土
1.砂(A),5.1,0.1,0.0,0.1,0.0,砂
1.礫(A),6.0,7.0,3.0,1.0,0.0,砂礫
1.腐植土(D),11.0,5.0,1.0,1.0,腐植土
1.ローム(D),12.1,0.0,3.1,0.1,0.0,ローム
1.泥(D),13.0,3.0,3.1,1.0,粘性土
1.砂質土(D),14.0,0.7,0.1,0.1,砂質土
1.砂(D),15.1,0.1,0.0,0.1,0.0,砂
1.礫(D),16.1,0.0,3.0,0.1,0.0,砂礫
1.岩盤,17.0,0.0,7.0,1.0,0.0,岩盤

1, 0 - 0,101,0.0,0.0,1.0,1.0,0.0≤N<1
1, 1 - 1,102,0.0,0.2,1.0,1.1,0.0≤N<2
1, 2 - 2,103,0.0,0.3,1.0,1.2,0.0≤N<3
1, 3 - 3,104,0.0,0.4,1.0,1.3,0.0≤N<4
1, 4 - 4,105,0.0,0.5,1.0,1.4,0.0≤N<5
1, 5 - 5,106,0.0,0.6,1.0,1.5,0.0≤N<6
1, 6 - 6,107,0.0,0.7,1.0,1.6,0.0≤N<7
1, 7 - 7,108,0.0,0.8,1.0,1.7,0.0≤N<8
1, 8 - 8,109,0.0,0.9,1.0,1.8,0.0≤N<9
1, 9 - 9,110,0.0,0.9,1.0,1.9,0.0≤N<10
1,10 - 10,111,0.0,1.0,1.0,1.10,0.0≤N<11
1,11 - 11,112,0.1,1.0,0.9,1.11,0.0≤N<12
1,12 - 12,113,0.2,1.0,0.8,1.12,0.0≤N<13
1,13 - 13,114,0.3,1.0,0.7,1.13,0.0≤N<14
1,14 - 14,115,0.4,1.0,0.6,1.14,0.0≤N<15
1,15 - 15,116,0.5,1.0,0.5,1.15,0.0≤N<16
1,16 - 16,117,0.5,1.0,0.5,1.16,0.0≤N<17
1,17 - 17,118,0.6,1.0,0.4,1.17,0.0≤N<18
1,18 - 18,119,0.6,1.0,0.3,1.18,0.0≤N<19
1,19 - 19,120,0.7,1.0,0.3,1.19,0.0≤N<20
1,20 - 20,121,0.8,1.0,0.2,1.20,0.0≤N<21
1,21 - 21,122,0.8,1.0,0.2,1.21,0.0≤N<22
1,22 - 22,123,0.9,1.0,0.1,1.22,0.0≤N<23
1,23 - 23,124,0.9,1.0,0.1,1.23,0.0≤N<24
1,24 - 24,125,0.9,1.0,0.1,1.24,0.0≤N<25
1,25 - 25,126,0.9,1.0,0.1,1.25,0.0≤N<26
1,26 - 26,127,1.0,0.9,0.0,1.26,0.0≤N<27
1,27 - 27,128,1.0,0.9,0.0,1.27,0.0≤N<28
1,28 - 28,129,1.0,0.8,0.0,1.28,0.0≤N<29
1,29 - 29,130,1.0,0.7,0.0,1.29,0.0≤N<30
1,30 - 30,131,1.0,0.6,0.0,1.30,0.0≤N<31
1,31 - 31,132,1.0,0.6,0.0,1.31,0.0≤N<32
1,32 - 32,133,1.0,0.5,0.0,1.32,0.0≤N<33
1,33 - 33,134,1.0,0.5,0.0,1.33,0.0≤N<34
1,34 - 34,135,1.0,0.4,0.0,1.34,0.0≤N<35
1,35 - 35,136,1.0,0.3,0.0,1.35,0.0≤N<36
1,36 - 36,137,1.0,0.2,0.0,1.36,0.0≤N<37
1,37 - 37,138,1.0,0.2,0.0,1.37,0.0≤N<38
1,38 - 38,139,1.0,0.2,0.0,1.38,0.0≤N<39
1,39 - 39,140,1.0,0.1,0.0,1.39,0.0≤N<40
1,40 - 40,141,0.0,0.0,0.0,1.40,0.0≤N<41
1,41 - 41,142,0.9,0.0,0.0,1.41,0.0≤N<42
1,42 - 42,143,0.9,0.0,0.0,1.42,0.0≤N<43
1,43 - 43,144,0.9,0.0,0.0,1.43,0.0≤N<44
1,44 - 44,145,0.8,0.0,0.0,1.44,0.0≤N<45
1,45 - 45,146,0.8,0.0,0.0,1.45,0.0≤N<46
1,46 - 46,147,0.7,0.0,0.0,1.46,0.0≤N<47
1,47 - 47,148,0.7,0.0,0.0,1.47,0.0≤N<48
1,48 - 48,149,0.6,0.0,0.0,1.48,0.0≤N<49
1,49 - 49,150,0.6,0.0,0.0,1.49,0.0≤N<50
1,50 - 50,151,0.5,0.0,0.0,1.50,0.0≤N
1, <No Value>,160,1.0,1.0,0.0,1.0,値なし

1.81,201,0.0,1.0,0.8,ボーリング孔内水位の補間による地下水
1.81,202,0.0,1.0,0.8,井戸情報の補間による地下水

2.土質岩種区分,1,0.
2.沖積層,2,1,1,2,3,4,5,6
2.洪積層・岩盤,3,1,11,12,13,14,15,16,17

2.N値,4,0
2.地下水,5,0,201,202

2.5未満,10,4,101,102,103,104,105
2.5≤N<10,11,4,106,107,108,109,110
2.10≤N<15,12,4,111,112,113,114,115
2.15≤N<20,13,4,116,117,118,119,120
2.20≤N<25,14,4,121,122,123,124,125
2.25≤N<30,15,4,126,127,128,129,130
2.30≤N<35,16,4,131,132,133,134,135
2.35≤N<40,17,4,136,137,138,139,140
2.40≤N<45,18,4,141,142,143,144,145
2.45≤N<50,19,4,146,147,148,149,150
2.50≤N,20,4,151

3.N値,4,【利用上の注意】Nモデル柱状図は複雑な土質条件や自
4.OriginalCoordinate,0
4.OriginalDatum,0
4.OriginalCoordinateNo,54
4.DisplayCoordinate,1
4.DisplayDatum,0
4.DisplayCoordinateNo,53

5.ModelName,補間モデル柱状図
5.MeshSize,50
5.MeshWidth,1.0
5.MeshHeight,1.0
5.N_Min,0
5.N_Max,50
5.N_Step,1
5.N_Value,-9999
5.N_OverMax_Enabled,1
5.N_UnderMin_Enabled,0
5.N_NoValue_Enabled,1

```

Soil category setting

N-value setting

N-value range: N\_Step value described on "data section: 5."  
(Single-byte space is necessary put in here in this way.)

$$1, 0 - 0, 101, 0.0, 0.0, 1.0, 1.0, 0.0 \leq N < 1$$

$$1, 1 - 1, 102, 0.0, 0.2, 1.0, 1.0, 1.1 \leq N < 2$$

$$1, 2 - 2, 103, 0.0, 0.3, 1.0, 1.0, 1.2 \leq N < 3$$

RGB

Layer name

Groundwater level setting

Group setting of soil classification, etc.

Group setting of N-value

Information display setting

Coordinate system setting

Model borehole log setting

## 4. 9 Marker setting

## Data category: 6

+ A set of category number "6", a marker names and following attribute values of marker is described as comma separated in one line per marker.

+ A marker is moved with the model, because it joins to the coordinate system of model.

+ The marker names and the font names are double-byte or single-byte alphanumeric characters. Others are single-byte

Setting item	Content
Category No.	"6" is written.
Marker ID	Freely-selected unique positive integer is determined to identify the marker.
Marker name	Displaying name of marker.
Layer name	Layer name relevant to marker. (The name has to completely coincide with the name in model.)
X coordinate	X coordinate of marker reference position
Y coordinate	Y coordinate of marker reference position
Z coordinate	Z coordinate of marker reference position
Font	Font is written.
Font size	Font size is written.
Font color (R)	R color components of text: 0.0-1.0
Font color (G)	G color components of text: 0.0-1.0
Font color (B)	B color components of text: 0.0-1.0
Background color (R)	R color components of info box: 0.0-1.0
Background color (G)	G color components of info box: 0.0-1.0
Background color (B)	B color components of info box: 0.0-1.0
Background color ( $\alpha$ )	Transparency of info box: 0.0-1.0 (0: transparent, 1: opaque)
Relevant file name	Relevant file name (or an absolute path to a relevant file). *The method of referring files is following. And handling files in octa file is also following.

About reference of relevant files

Layer information and marker relevant files refer to each file due to following rules,

When the relevant file is designated by absolute path:

- + The file designated by absolute path is referred direct.

When the relevant file is designated by its name:

1. when the data is an octa file, the referred file is:
  - + at first priority, in octa file.
  - + at second priority, in the same folder as the data file.
2. when the data is NOT an octa file, the referred file is:
  - + in the same folder as the data file.

About handling the relevant files in octa file

A relevant file in octa file is opened with standard application after it has been output in temporary folder of system standard at once.

<Output location>

[Standard temp folder of Windows]/OCTAS/[octa file name]/[relevant file name]

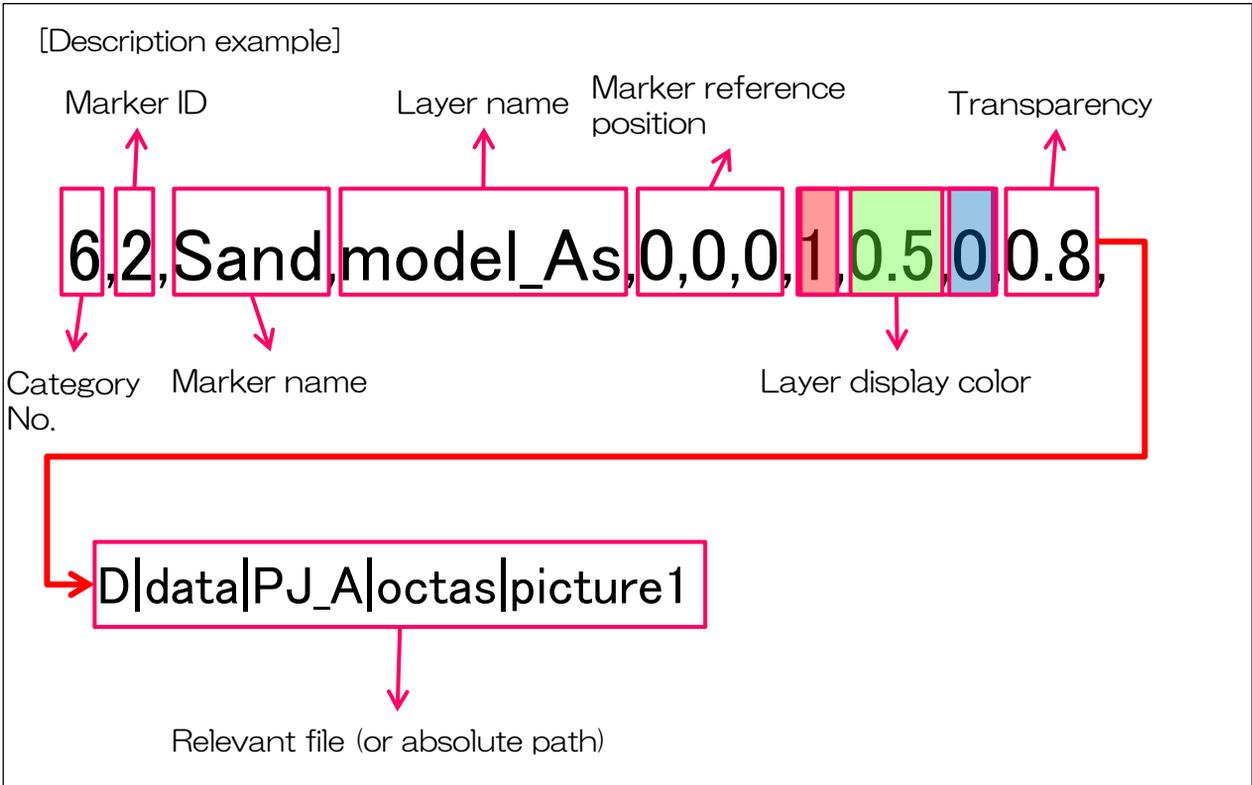
A temporary relevant file is opened with "read-only" attribute to prevent from editing.

Editing and/or saving the file are available after saving it as a new file and naming it in user area in the application.

(The same operation as a file in zip is opened in Excel or etc.)

Output relevant file in temporary is deleted at the time of quitting OCTAS. However, while the temporary file is opened, there are cases where the file remains (depending on application).

As this elimination process of temporary relevant files is done at the every time of quitting OCTAS, the remained file is deleted at the next quitting time.



## Data category: 7

+ A set of category number "7", a key name and a setting value is described in one line per item.

Setting item	Content
Category No.	"7" is written.
Setting item key	Key name of setting item
Setting item value	Value of setting item

Key name	Default value	Setting
<b>DataType</b>		<b>Type of data</b> 1: Surface 2: Voxel
<b>DataKind</b>		<b>Kind of data</b> 1: Data of oyoDB 2: Data of *NIED
<b>ValueCount</b>		<b>Count of value items (0 or more)</b>
<b>ValueType</b>		<b>Type of value items</b> <b>Multiple type is described as comma separated.</b> 1: Integer 2: Real number
<b>ValueLayer</b>		<b>Layer information</b> <b>Following information is described as comma separated.</b> <b>Number of value items (1 or more)</b> <b>Layer number (integer number)</b> <b>Minimum of value range</b> <b>Maximum of value range</b>

\*NIED: National Research Institute for Earth Science and Disaster Resilience

[Supplement of layer information]

- \*The range is determined minimum or over and less than maximum.
- \*Either of minimum or maximum is skippable.
- \*Layer number must be unique in the model. This layer number is named as, layer display names or colors are arranged as layer display setting (data section: 1) on demand.





The date of issue: Oct. 18th, 2018 OCTAS Ver1.2.7.7 support

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