FOR NEILSOFT PVT LTD

Scan to 4D

Possible Ideas & Suggestions...

By Shubham Jadhav
+91-9326837711 / +91-9987785382
shubham48.jadhav@gmail.com

CATALOGUE

Ease of Access

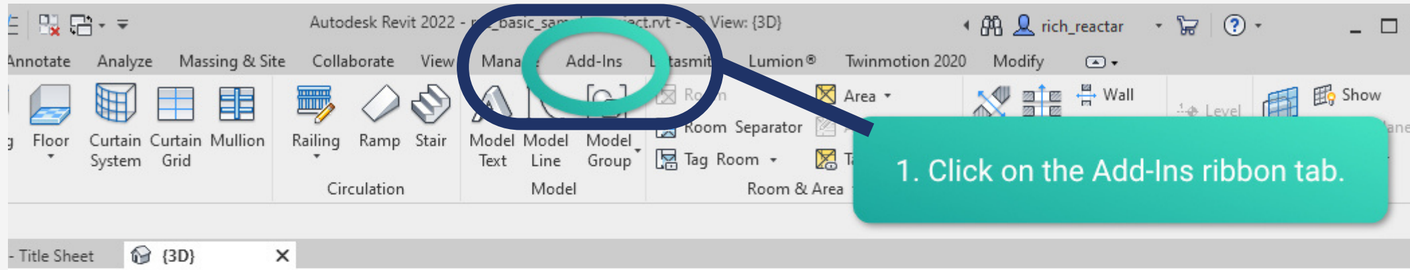
PART 1

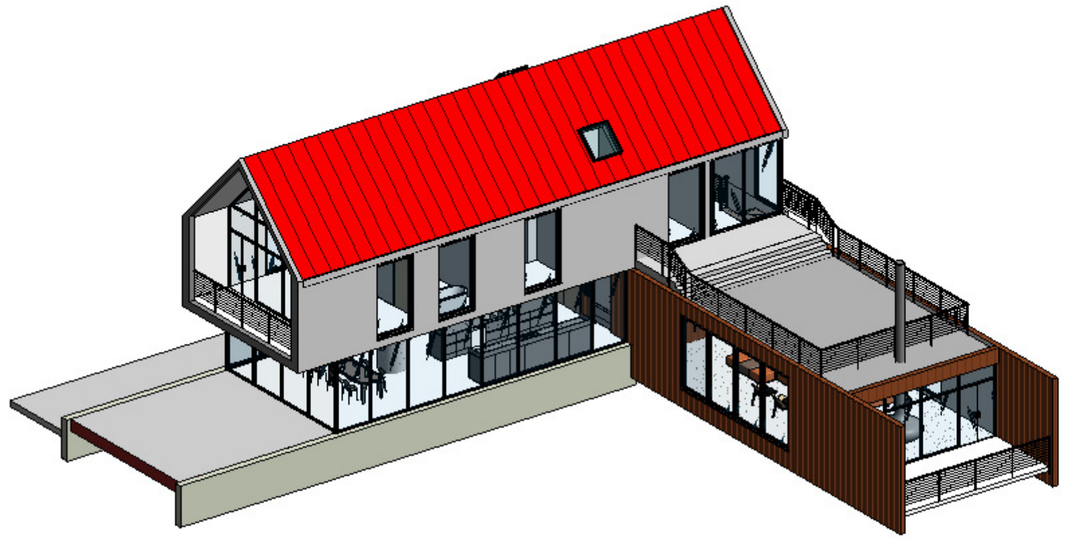
Part 1 - Ease of Access

1.1

Having an Revit Plugin for our software would be an plus point

- Our primary work is tied to and relies upon Revit, so having a Revit Plug-in/Add-in would simplify using the software easier.
- As users wouldn't be required to switch between two software, it would improve the user experience overall.
- In order to access our software, go to ribbon bar and click on "Add In".
- Top used revit Plug ins are Dynamo, Pyrevit, Family Reviser, Guardian, pro sheet etc.





Shrinking Point Cloud File Size

PART 2

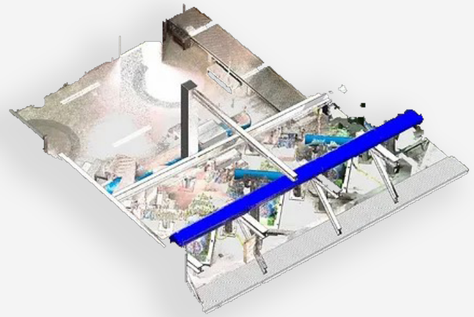
Shrinking Point Cloud File Size

AI based transformation of Point Clouds Data to different layers

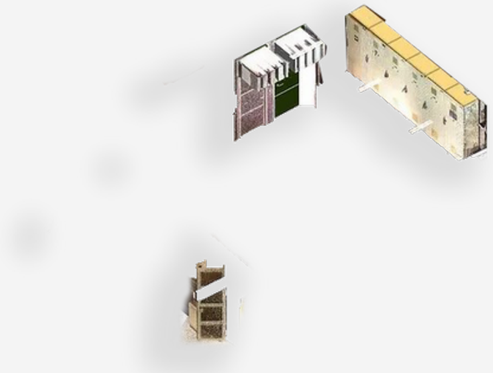
- The user would definitely benefit from the given point cloud file being divided into its many types, as seen in the photos.
- The user can concentrate on the necessary element and hide/half-tone the rest using visual graphics, this would also consume lesser RAM & eliminate possibility of PC getting hanged.
- Please refer next slide for controlling Visibility Graphics.

2.1

Walls



Floor



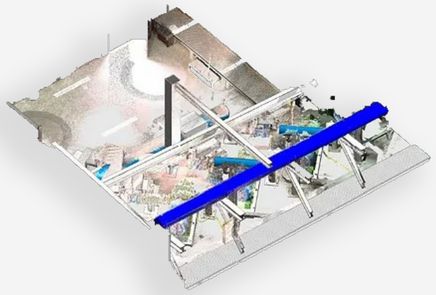
Furniture

Shrinking Point Cloud File Size

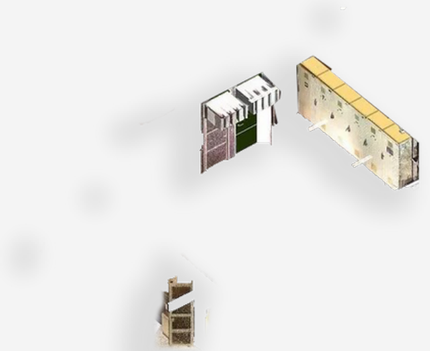
2.1

Controlling Visibility Graphics for Point Cloud

Walls



Floor



Furniture

Model Categories | Annotation Categories | Imported Categories | Filters

☑ Show model categories in this view

If a category is unchecked, it will not be visible.

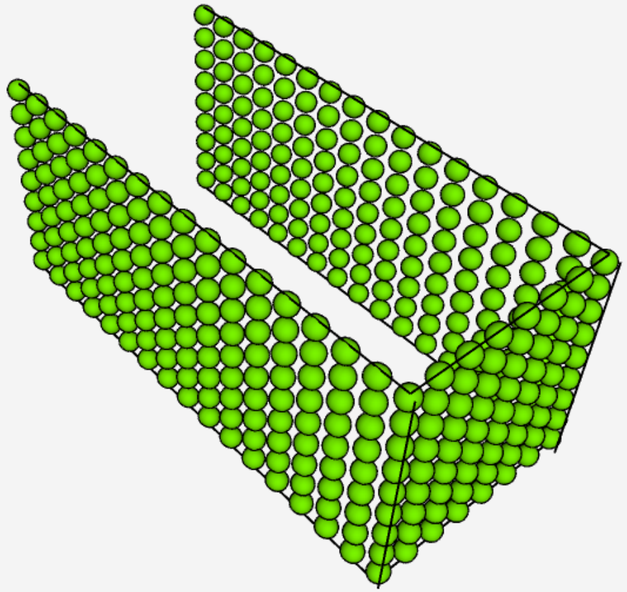
Visibility	Projection/Surface		Cut		Halftone	Transpar...	Detail Level
	Lines	Patterns	Lines	Patterns			
⊞ ☑ Areas					☐	☐	By View
⊞ ☑ Casework					☐	☐	By View
⊞ ☑ Ceilings					☐	☐	By View
⊞ ☑ Columns					☐	☐	By View
⊞ ☑ Curtain Panels					☐	☐	By View

Shrinking Point Cloud File Size

2.2

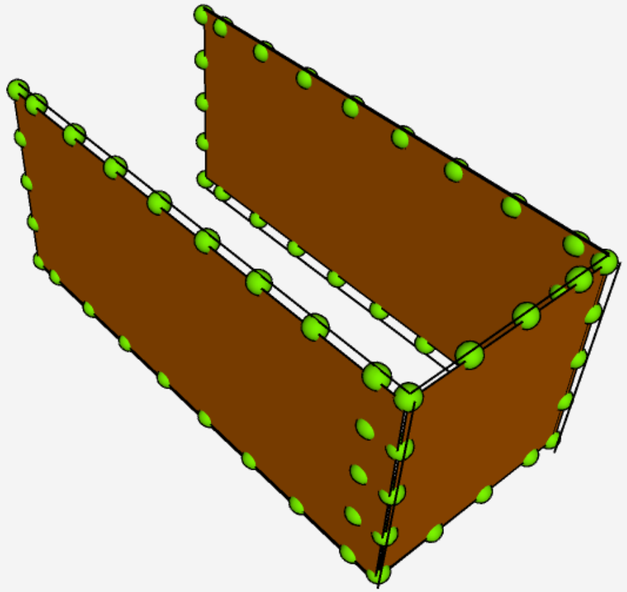
Whenever necessary, conversion of point data to JPEG images

- The point cloud file is enormous in size, as the given file is formed by several points & each of the point has X,Y,Z value stored in it.



Combination of points

- Alternative we can keep the points on edge of surface as it and convert all the other points to Jpeg
- This Jpeg will be intact to the edge points for reference. This method will reduce the the file size.



Jpeg intact to edge points

Sharing Point Cloud File Size

2.3

End 2 End & Peer 2 Peer sharing for huge Point Cloud file at ease

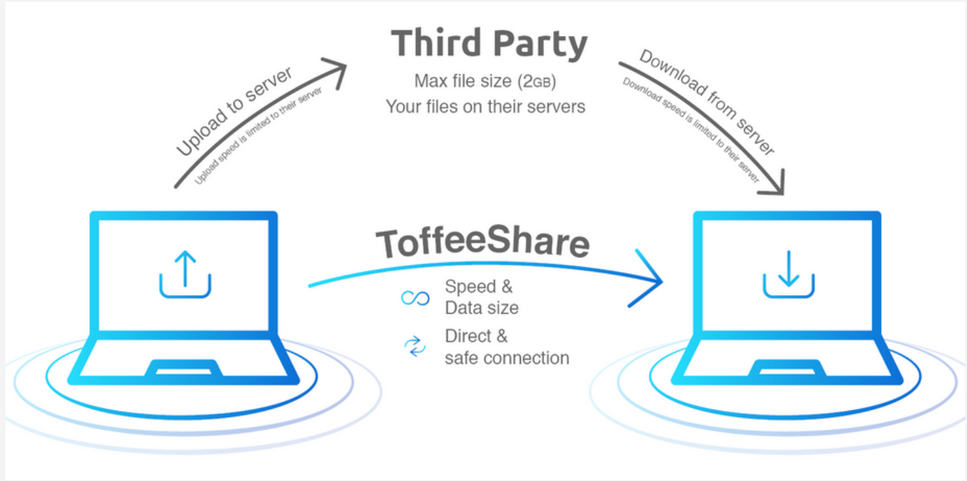
- As Point Cloud file being enormous in size, sharing that file is time consuming.
- Most common way of transfer is user uploads the file to 3rd party server & then that file is downloaded from server by the Receiver. This consumes lots of time.

  Sender --> 3rd Party Server --> Receiver

- Instead of uploading file to server, we can directly create Local URL from from Sender & Receiver can download from that URL. This will save lot of time.

  Sender (Local URL) --> Receiver (Download from that URL)

- We can use toffeeshare.com as an case study to learn more about this type of sharing.



toffeeshare.com for Casestudy

Features

PART 3

Software Features

Comparison 3D Walkthrough

- As our Scan to 4D process would be fully automated by AI, there is room for minor errors as this type of software is new in the market.
- Thus we can provide the feature that be helpful for the user to compare between Scan File & Generated BIM File.
- Walkthrough will have all the easy way to navigate & move within structure.
- Thus user can easily find the error & rectify it while having the check.

3.1

Scan Copy

Generated BIM

Scan Copy

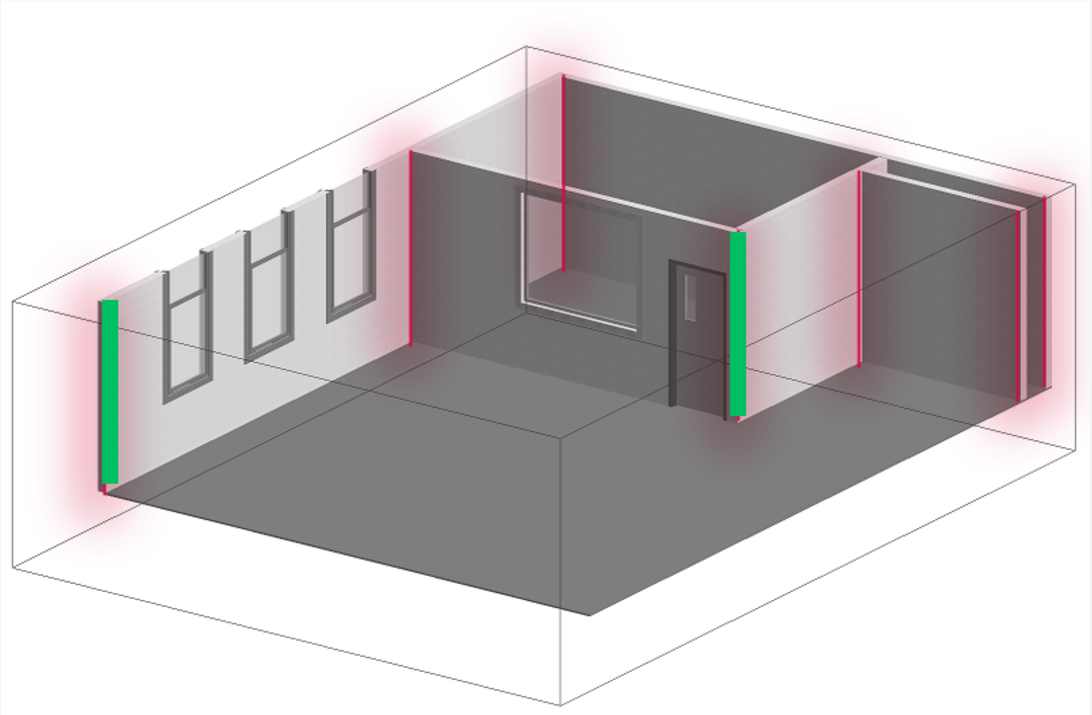
Generated BIM

Software Features

3.2

Auto detecting lines at 90° and converting them to Hidden View

- Edge lines always plays an crucial role for defining the form.
- Introducing a function that automatically recognizes the point cloud file's edges, which may be shown in a different color depending on whether they were snapped or not with Generated BIM Model.
- This feature could be very handy and easy for user to cross check where the Generated BIM Model is accurate.
- Refer given image for an glimpse.



Auto Detecting
Perpendicular Lines

Software Features

Replacing given Point Cloud Component with Revit family throughout the project

- In Revit, whatever repetitive component which used and most of time are Revit Families.
- Thus, even our software should be capable enough to auto detect the repetitive component from Point Cloud file & could have feature to replace that repetitive components by assigned family in one click throughout the project.
- For following example of point cloud data of Auditorium, Chairs & LED lights are of major repetitive element. Thus feature that could replace those with respective family with 1 click would save lot of time.

3.3

Point Cloud File

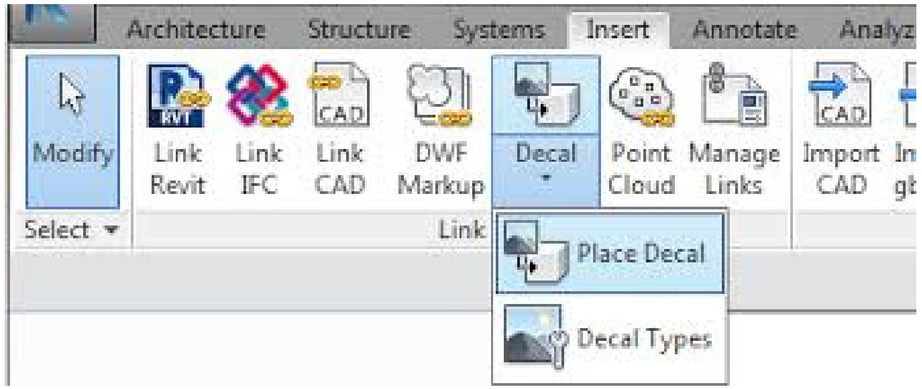
Adding repetitive Revit families by one click

Software Features

3.4

Auto detecting the painting and inserting them decal in Revit

- Many of the point cloud file has Painting attached to the wall.
- Thus while generating automated 4D model, our software should also detect the Painting and add as Decal.
- This will act as an per replication of as build point cloud file.



Adding that painting as Decal

Detecting Paint in Point Cloud File

Extra

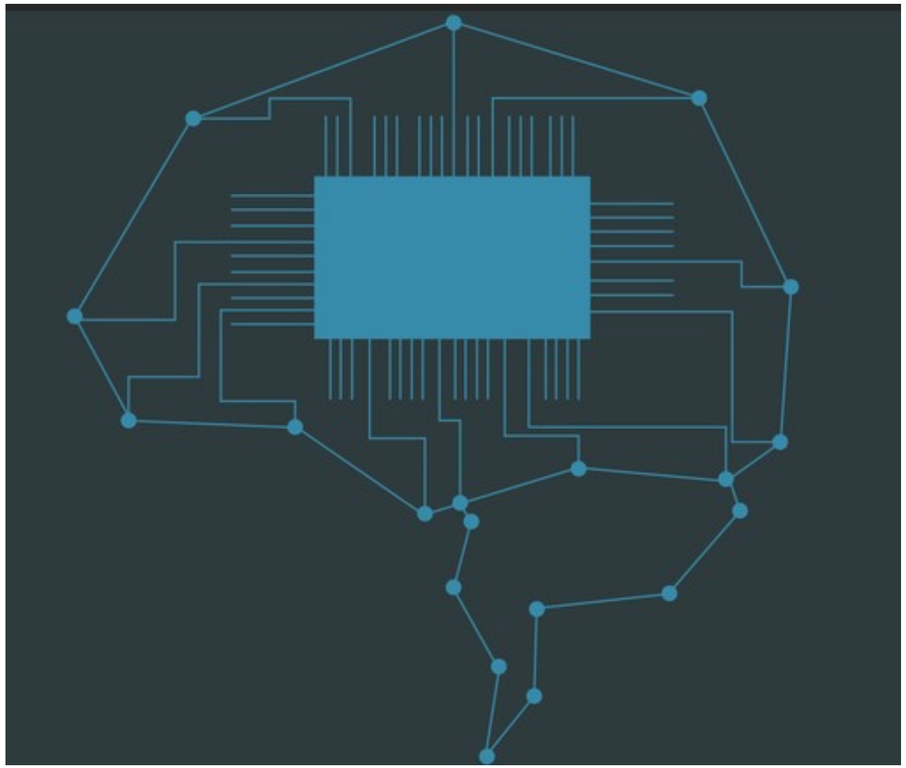
PART 4

Software Features

4.1

Tracking exported and updated data continuously for software improvement

- In order to gain perfection for Scan to 4D , our software to continuously analysis the Generated Model & Modified model by the user.
- This will help our software to detects the errors made while reading Point Cloud file. And work on it to avoid such errors in future.
- The more data our software gathers and analyses, the less chance of problems emerging later.
- Thus Constant learning & analyzing is must.



Thank You

By Shubham Jadhav
+91-9987785382
+91-9326837711
shubham48.jadhav@gmail.com