

Architectural Drawing of G+10 Building By 3ds Max+V-Ray Lumion

Abhay Yadav¹, Devesh Ojha²

^{1,2}Department of Civil Engineering, Amity University Uttar Pradesh, Lucknow Campus, India

¹abhay6108277@gmail.com, ²dojha@lko.amity.edu

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1



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Abstract

This work aims to complete the planning and architectural drawing of the G+10 building. The planning is carried out in AutoCAD followed by architectural drawing in Autodesk 3DS MAX 2015. The rendering of this work has been done in LUMION 10. The building design is a multi-story residential building i.e., G+10. The building is rectangular in shape. The ground floor is left as a parking space for 40 flats of the building. Every floor has 4 flats, two 2bhk and two 3bhk. Plans for all the floors are identical. The orientation of the building is in such a way that the front is facing towards the south. The building has been designed as an RCC framed structure and the type of wall is a brick wall.

Keywords

3DS MAX+V-RAY, LUMION, building architectures

1. Planning

The planning has been done on the AutoCAD. **AutoCAD** is a commercial computer aided designing (CAD) a drafting software application. Developed and advertised through Autodesk, AutoCAD become first released in December 1982. AutoCAD is utilized in industry, with the aid of architects, undertaking managers, engineers, photograph designers, metropolis planners and different experts [4].

2. Description of the Plan

The Length of the building 23.466m and breadth 23.41m. Two 2bhk and two 3bhk on each floor -In every flat there is one master bedroom with attached washroom. Stairs from three sides to serve as subsidiary route for going to roof and other floors, in case of emergency and other cases like maintenance, painting etc [5-10].

3. Drawing Plan in AutoCAD

The drawing started with setting unit.

3.1. Click  > Utilities > Drawing Setup.

3.2. Click the Units tab.

Specifying default units' options for the current drawing

3.3. Under Drawing Units, select the desired units. After the unit set up. The following command are used for drawing a plan.

3.4. Circle

3.4.1. Centre Point

Makes a circle dependent on a middle point and a range or distance across esteem.

3.4.2. Radius

Enter a worth or determine a point.

3.4.3. Diameter

Enter a value or specify a second point.

3.4.4. 3P (Three Points)

Creates a circle based on three points on the circumference. Tan, Tan, Tan

Creates a circle tangent to three objects.

3.4.5. 2P (Two Points)

Creates a circle based on two endpoints of the diameter.

3.4.6. TTR (Tangent, Tangent, Radius)

Makes a circle with a predefined sweep and digression to two articles. At times more than one circle coordinates with the predefined models. The program draws the circle of the predetermined range whose digression focuses are nearest to the chosen focuses.

3.5. Erase

Click Home tab Adjust board Eradicate.

Find at the Select Articles brief, utilize a determination strategy to choose the items to be deleted or enter a choice:

- Enter L (Last) to eradicate the last article drawn.
- Enter p (Past) to eradicate the last determination set.
- Enter all to eradicate all articles from the drawing.

3.6. Mirror

Makes a reflected duplicate of chosen objects. We can make protests that address half of a drawing, select them, and mirror them across a predefined line to make the other half.

3.7. Rotate

The Turn order in turns objects around a point that we indicate. Follow these basic strides to utilize the Turn order:

- Press Esc to ensure that no order is dynamic, and no articles are chosen.
- Click the Turn button on the House tab's Change board, or enter RO and press Enter.
- Select at least one items and afterward press Enter to end object choice.

AutoCAD prompts us for the base point for turning the chose objects:

Indicate base point:

- Specify a base point by clicking a point or composing arranges.

The base point turns into the point around which AutoCAD pivots the articles. You likewise need to indicate a turn point:

Indicate turn point or [Copy/Reference] <0>:

- Specify a revolution point.

3.8. Trim

First, click home tab change board Trim. Second, select the items to fill in as front lines. Press **Enter** when you wrap up choosing the front lines. To choose all showed objects as likely bleeding edges, press Enter without choosing any articles. Third, select the items to manage and press Enter a second time when you wrap up choosing the items to manage

3.9. Offset

The offset order in AutoCAD is utilized to make equal lines, concentric circles, and equal bends. We can balance any article through a point or at a predefined distance. We can make as many equal lines as possible and bends with the assistance of the offset order. The offset items can likewise be changed further as per the prerequisites. Here, change of offset object implies that we can apply trim, expand, and different strategies on it.

3.10. Array

Array is the order used to attract different duplicates of an article a specific example or request. We can likewise deal with the distance between the articles in the exhibit. The alternate route key for Exhibit is AR. To carry out an exhibit, we can type Cluster or AR on the order line and afterward press Enter.

3.11. Move

Move order in AutoCAD is utilized to move objects at a predefined distance and bearing. To move the items with accuracy, we can utilize object snaps, network snaps, facilitates, and so forth. There are four stages to move any item whatsoever explicit distance in a predefined bearing.

- Select articles We want to choose the items.
- Specify the base point. Determine the beginning stage to move, which goes about as a base mark of an item.
- Specify the highlight place a moving article Indicate a highlight put the item being moved. We can either indicate it utilizing a cursor or can enter the relocation esteem in the X, Y, and Z-bearing. For instance, 3, 4. The item will be moved 3 Units the X way and 4 Units in the Y heading from its present position.
- Displacement means the overall distance and bearing of the article from its last position. It decides how far the article is set from its unique position.

3.12. Rotate

The rotate is utilized to pivot the item by a flat out point. It turns objects through the predefined point. The predetermined point is the base point, and the turn is performed starting there. The revolution of items can be performed by arbitrarily hauling the cursor and furthermore by the predetermined point.

3.13. Rectangle

- a. Click Home tab > Draw board > Square shape.
- b. Specify the primary corner of the square shape.
- c. Specify the other corner of the square shape.

By Length and Width

- i. Click Home tab > Draw board > Square shape.
- ii. Specify the principal corner of the square shape.
- iii. Enter D for Aspects.
- iv. Enter the length.
- v. Enter the width.
- vi. Specify the other corner.

Note: You are limited by the length and width esteems.

By Region

- i. Click Home tab > Draw board > Square shape.
- ii. Specify the primary corner of the square shape.
- iii. Enter A for Region.
- iv. Enter the region.
- v. Do one of the accompanying:
- vi. Enter L to enter the length. The width is determined dependent on the length and the region.
- vii. Enter W to enter the width. The length is determined dependent on the width and the region.
- viii. Enter the incentive for the length or width.

With Pivot

- i. Click Home tab > Draw board > Square shape.
- ii. Specify the primary corner of the square shape.
- iii. Enter R for Turn.
- iv. Enter the turn esteem or enter P to pick two focuses to characterize the point of revolution.
- v. 5.Specify the other corner.

4. Dimension Style

AutoCAD Dimension Style Manager

The Dimension Style Manager is utilized to create, modify, abrogate, and think about the recent fads and aspects in AutoCAD. The Standard aspect style is considered as the default aspect style.

To open the Aspect Style Supervisor

Type D or DIMSTY on the order line or order brief and press Enter. By utilizing above order, the arrangement has been drawn.

The following is plan of 2BHK level (Figure 1). Space of 2BHK arrangement is 1336.38 sq. ft. Entire level is completely ventilated.

As name recommend, it has two room. One bedroom is of aspect 13'4"X12'3". The other room is of aspect 11'X12'3" Also, this bedroom has a join toilet of 4'8"X4'1". An enormous overhang has been given to partake in the view, its aspect is 4'8"X17'8.5". The entry to gallery is through a dinning lobby. There is additionally a lounge room of region 14'6"X7' and secluded kitchen of 11'X7'. A visitor toilet has been given 5'X7' [1].

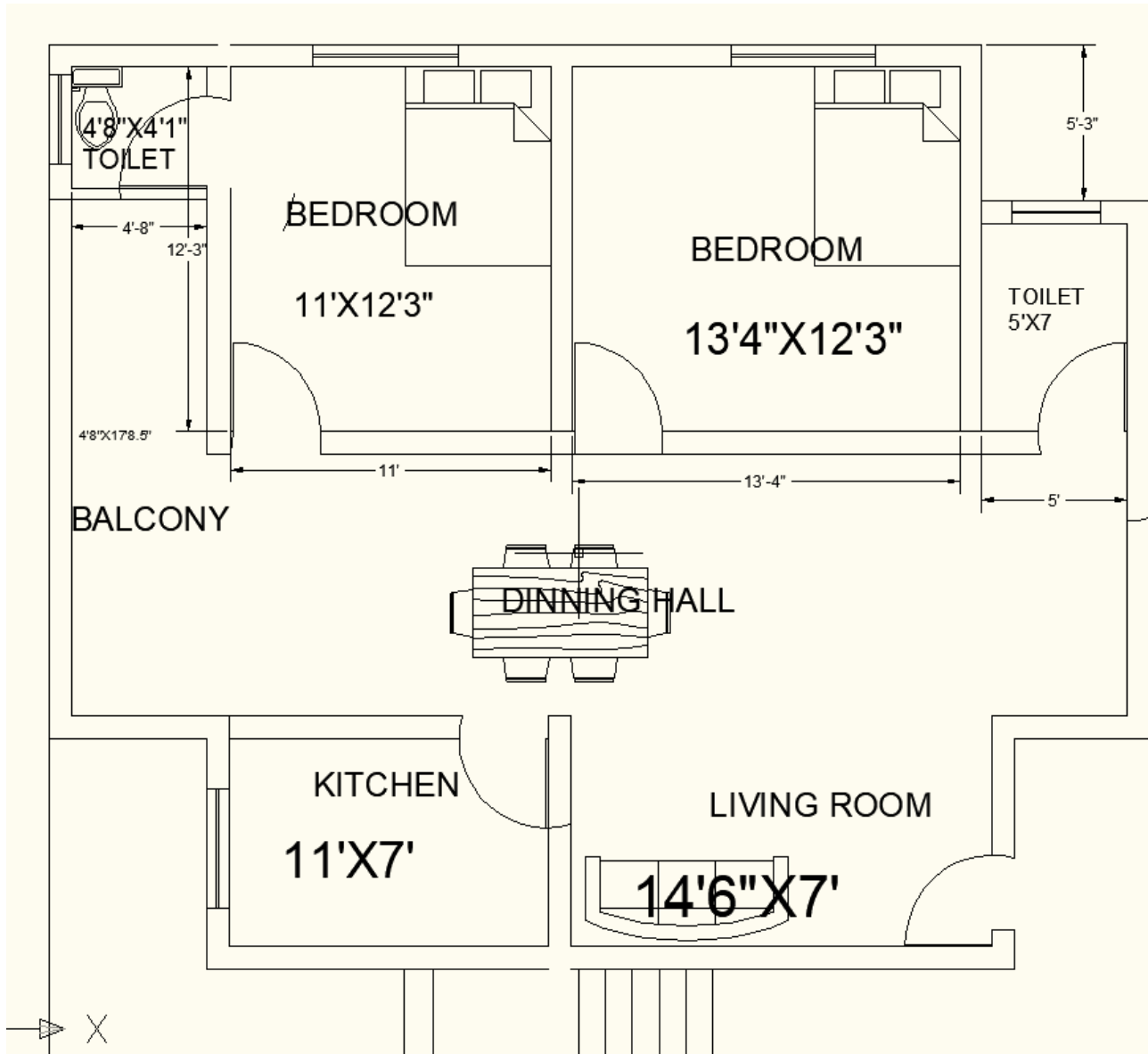


Figure 1. Plan of 2BHK level

Below is the plan of 3BHK (figure 2). Space of 3BHK level is 1336.38 sq. ft. It has a gigantic family room of 13'X6'5" with append dinning Corridor. Room 1 has aspect 12'8"X13'5". Bedroom2 has aspect 11'X13'5" with connect washroom of 5'5"X7' and overhang of 5'5"X 5'8". Room 3 has aspect of 11'7"X11'. The secluded kitchen aspect is 11'X 6'5". It has a join overhang 5'1"X6'5".

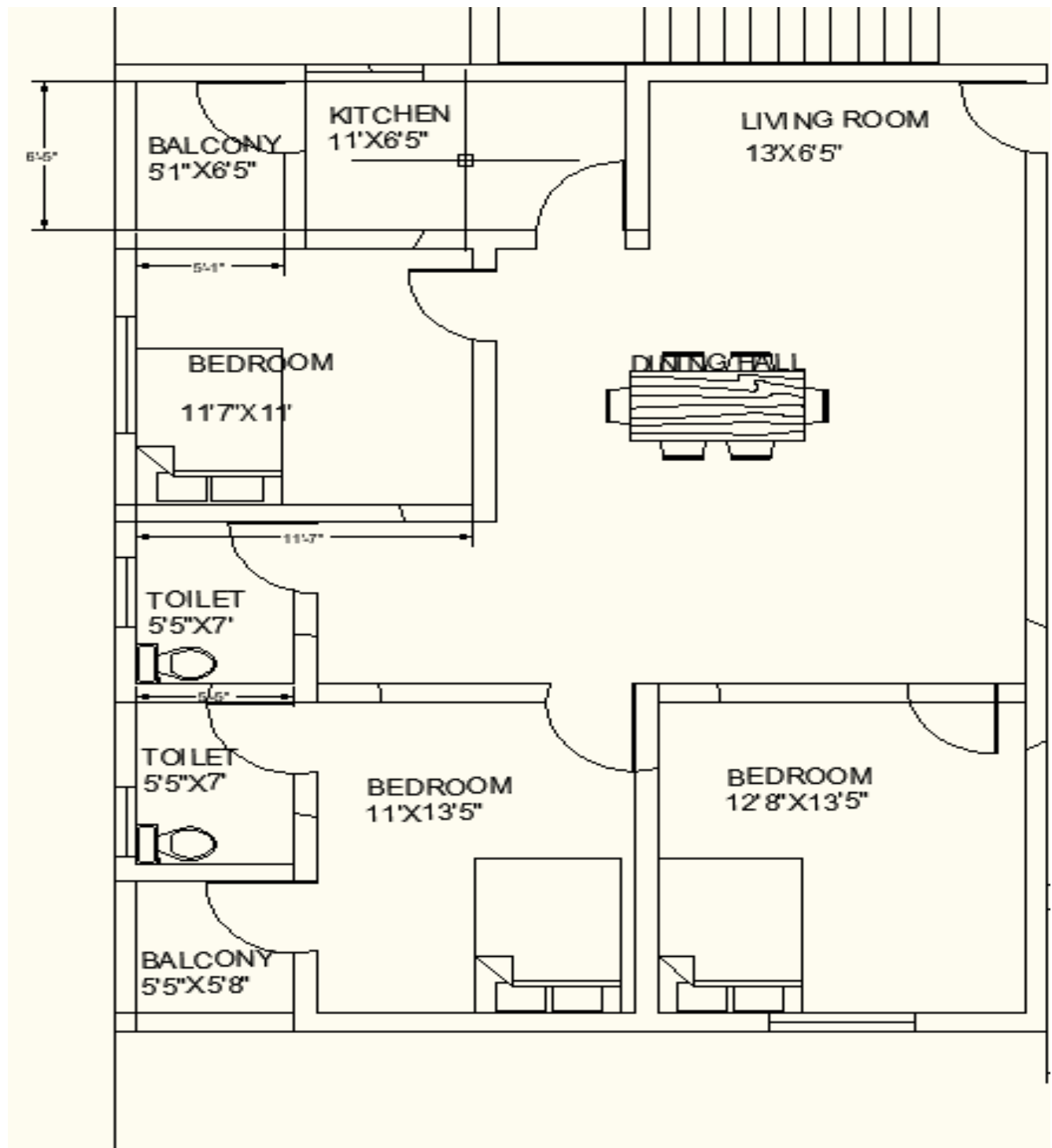


Figure 2. Plan of 3BHK level

Below is the whole plan of the building (figure 3). Total area of building is 5967.136 sq. ft.

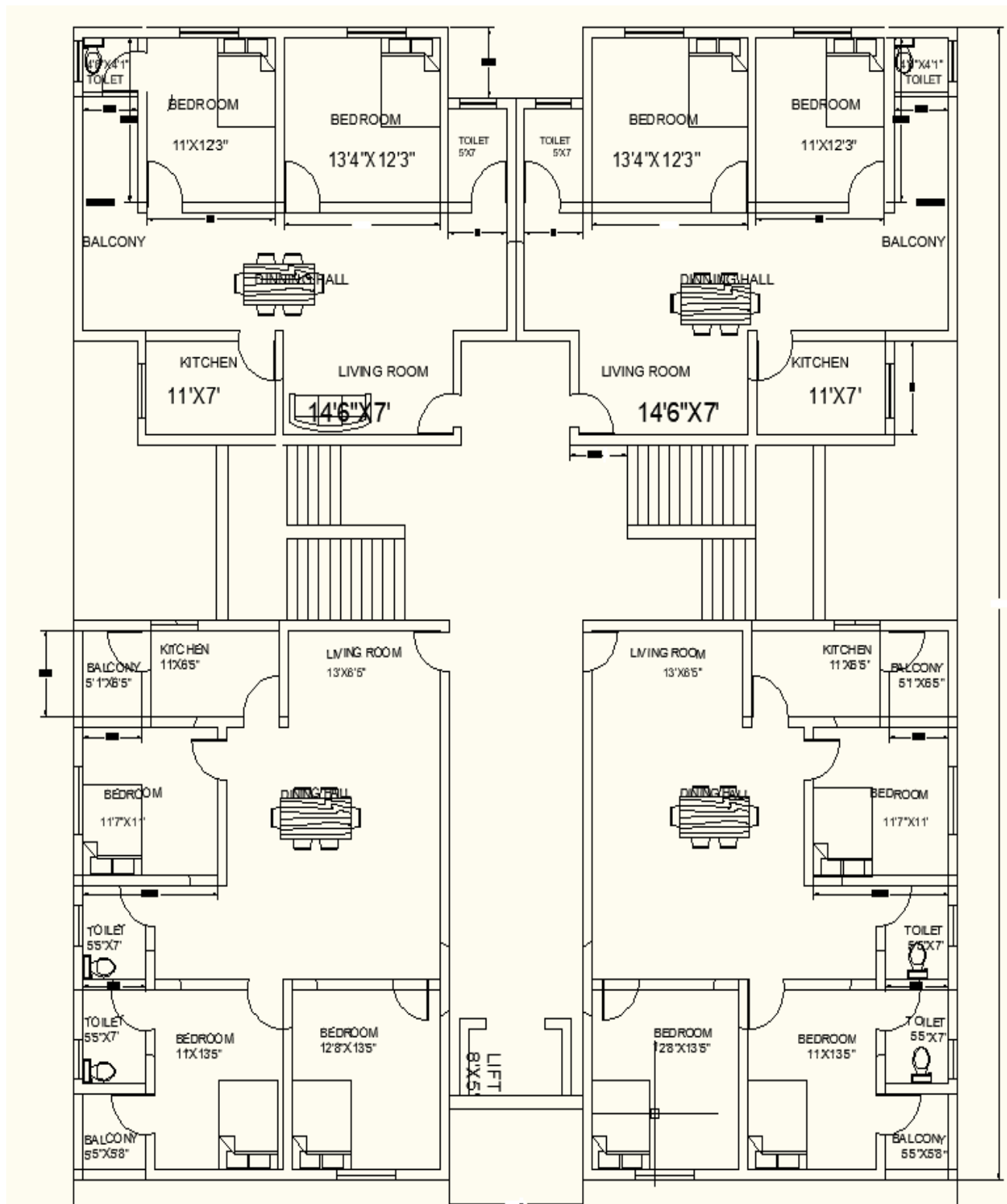


Figure 3. Plan of complete building floors

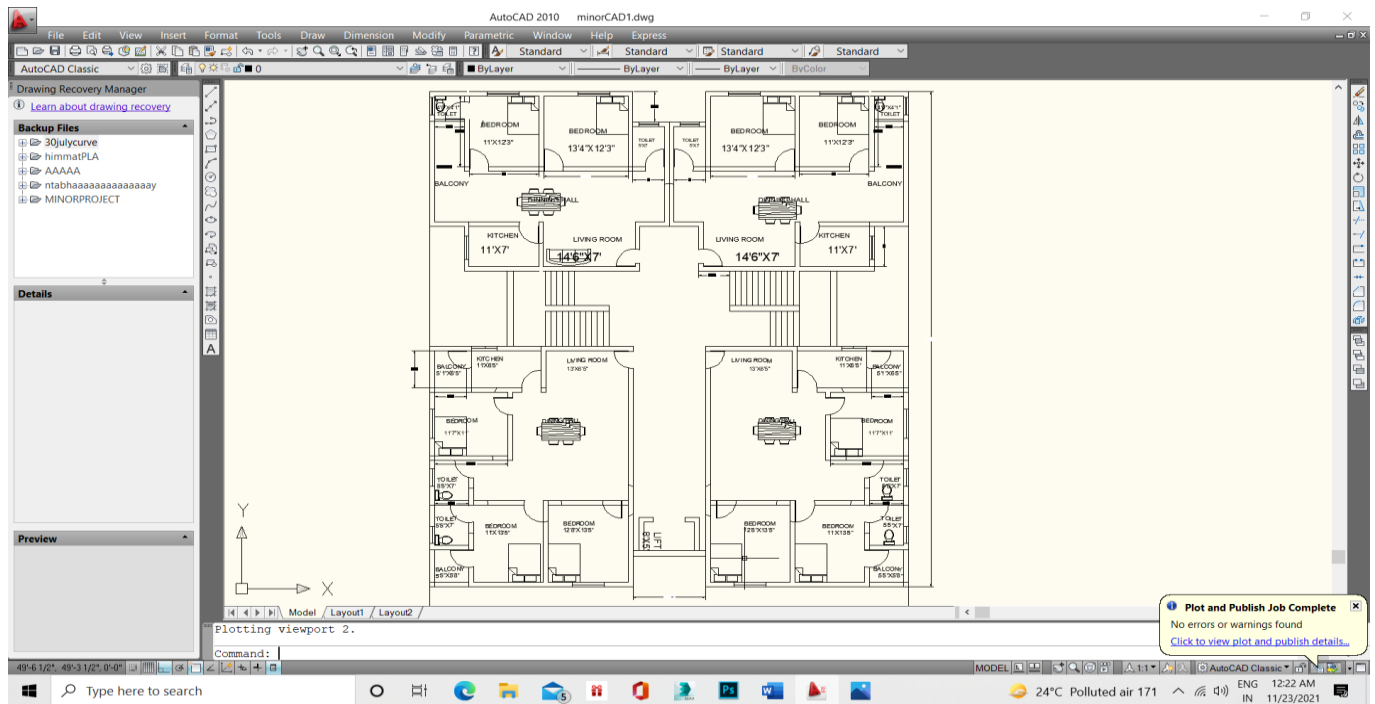


Figure 4. Plan of complete building floors in auto CAD

5. Drawing Architectural Plan

Import the CAD plan to the 3DS MAX

The accompanying advance are continued in bringing in the record

- i. From the Application menu, pick Import.
- 3ds Max opens a Select Record to Import discourse.
- ii. 2. Browse to the envelope \\import\\AutoCAD_files\\ and pick the ideal file(.dwg), After stopping for a moment, an AutoCAD DWG/DXF Import Choices discourse shows up. In case we get an admonition about intermediary objects, simply click Yes.

Then, at that point, by utilizing the accompanying devices the arrangement has been drawn-STANDARD PRIMITIVE

- **Box:** Box produces one of the most straightforward of the natives.
- **Cone:** The Cone highlight allows us to deliver round cones: upstanding, upset, and shortened.
- **Sphere:** Sphere produces a full circle or a level part of a circle like a side of the equator
- **GeoSphere:** make spheres and hemispheres based on three classes of regular polyhedrons.
- **Tube:** The Tube primitive produces a chamber with a concentric opening. The shape can be round or prismatic.
- **Torus:** Torus produces a ring with a round cross area, here and there alluded to as a donut.
- **Cylinder:** Cylinder produces a chamber, which you can \"slice\" around its significant pivot.
- **Pyramid:** The Pyramid primitive has a square or rectangular base and three-sided sides.
- **Teapot:** The Teapot primitive produces a composite article involving a top, body, handle, and spout.

EXTENDED PRIMITIVE, Extended Primitives are a collection of complex primitives for 3ds Max.

6. Hedra

Use Hedra to deliver objects from a few groups of polyhedra.

- **Torus Knot:** Torus Knot makes an intricate or hitched torus by drawing 2D bends in the ordinary planes around a 3D bend.
- **ChamferBox:** Use ChamferBox to make a container with inclined or adjusted edges.
- **ChamferCyl:** Use ChamferCyl to make a chamber with inclined or adjusted cap edges.
- **OilTank:** Use OilTank to make a chamber with raised covers.

Compound Object

- Compound articles normally consolidate at least two existing items into a solitary item.
- Go to Create panel then Geometry) then Compound Objects
- Standard menu followed by Create menu then Compound
- Enhanced menu followed by Objects menu then Compound Objects

Pro Boolean

The ProBoolean and ProCutter compound articles give you displaying devices for consolidating 2D and 3D shapes in manners that would be troublesome or incomprehensible in any case.

Connect Compound Object

The Connect compound item allows you to interface at least two articles between "holes" in their surfaces.

Boolean Compound Object

A Boolean object consolidates two different items by playing out a Boolean procedure on them.

By using above tools, the front architectural elevation is drawn.

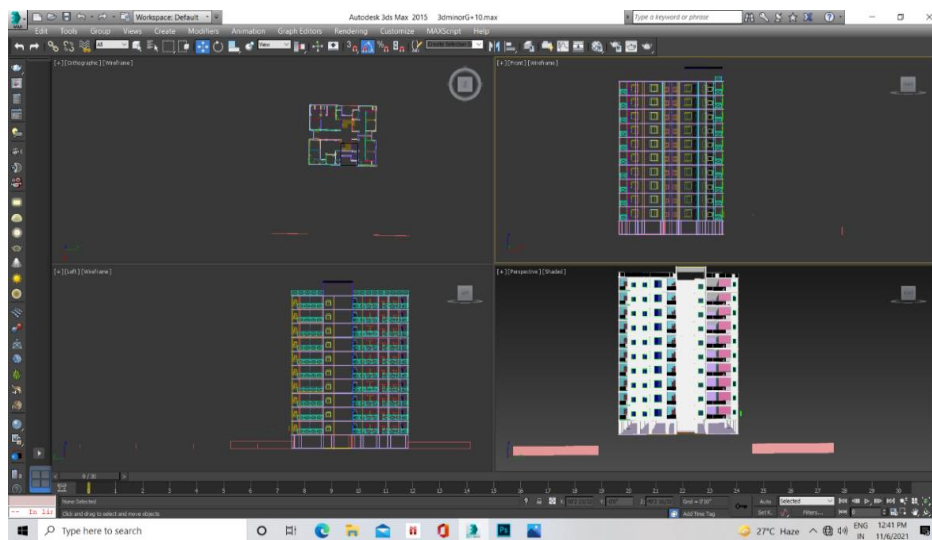


Figure 5. Front architectural elevation

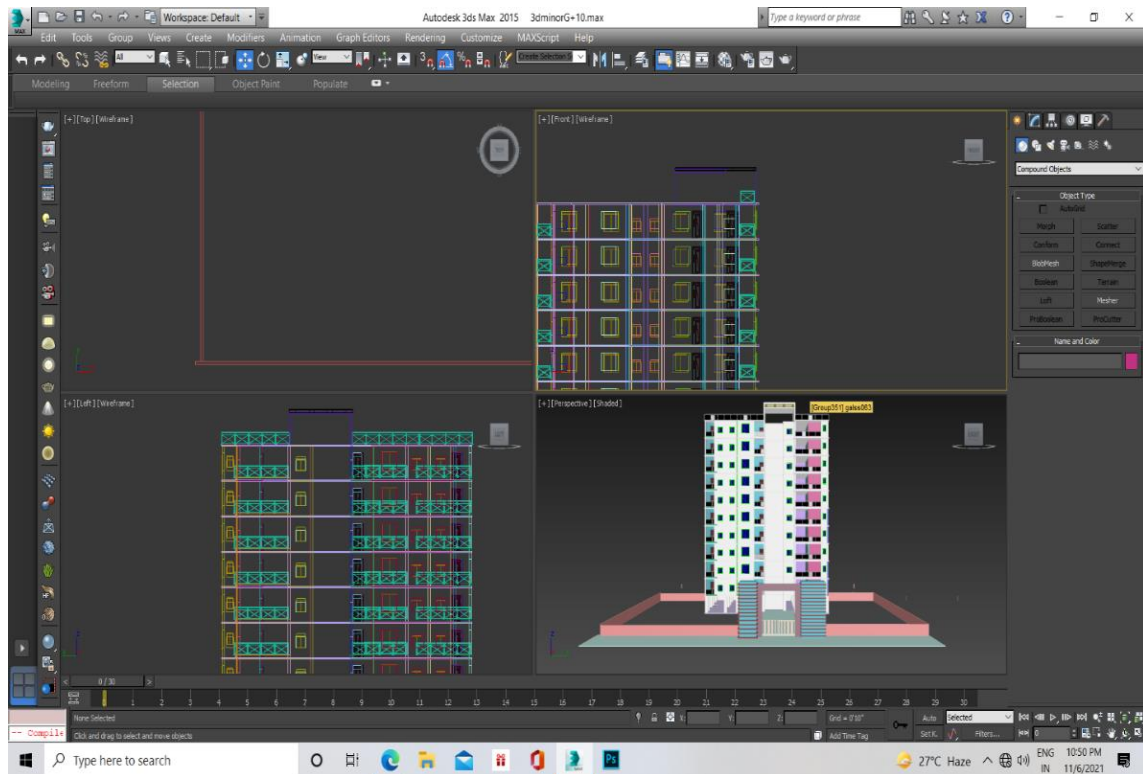


Figure 6. Front view of building in 3ds Max

7. Applying Texturing

To apply a material to an article, do one of the accompanying:

- If the material is chosen in the Material Manager (either the Record or the Minimized interface) and the item is chosen in the scene, click Relegate Material to Determination.
- In the Record Material Manager, haul from the material hub's result attachment into a viewport and drop the wire over the item.
- Drag a material from a library in the Material/Guide Program and drop it on the article

Importing 3d Drawing in Lumion

The accompanying advances are involved

- Select the models you need to commodity to Lumion and snap on:
Record -> Product -> Commodity Chose.
- Select the. FBX record design followed by the Autodesk Media and Amusement preset

Presently subsequent to bringing in the model apply the surface in Lumion to give its more sensible look. Then, at that point, render it [3].



Figure 7. 3d Drawing of building

8. Conclusion

3ds max help us to create 3d model of a building, thus helping us to better understand the building or the object. It helps us to determine the design and outlook of the work.

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