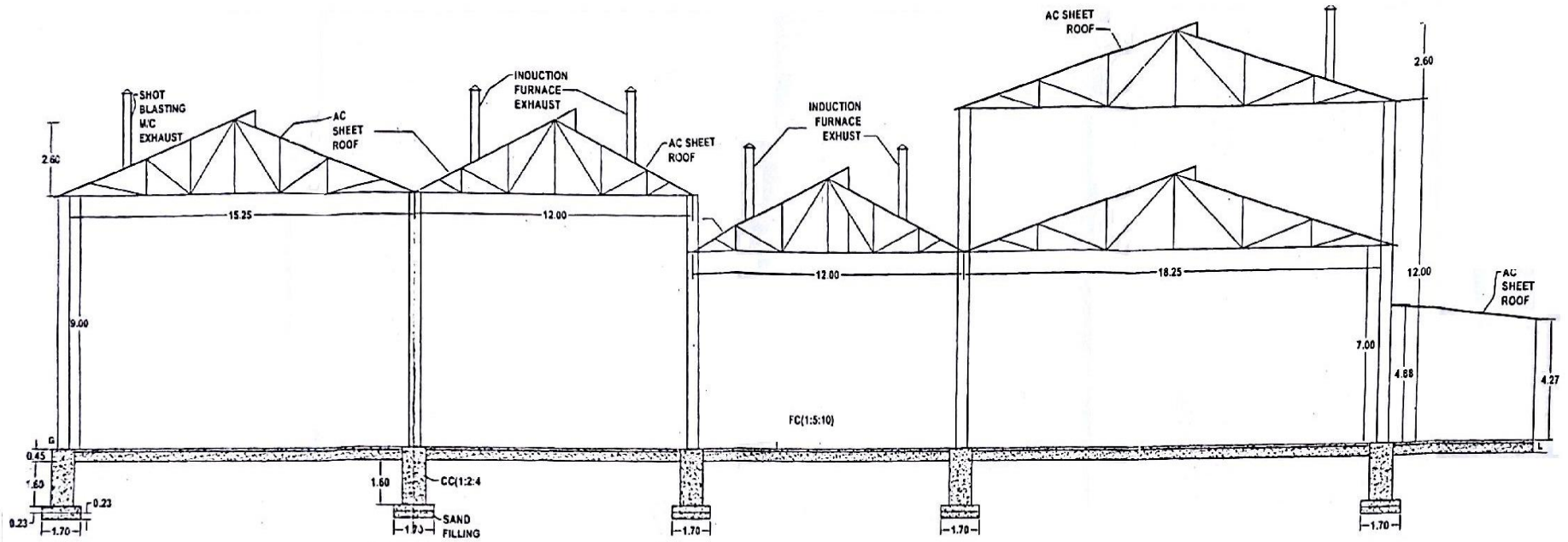


# VALUATION OF INDUSTRIAL PROPERTIES



**R JAYARAMAN BE MISTE MIE FIV**  
**REGISTERED VALUER (Year 2017)**

# **VALUATION APPROACHES**

## **SALES COMPARISON APPROACH**

The sales comparison approach is based primarily on the principle of substitution. Comparing a property's characteristics with other comparable properties that have recently sold in similar transactions

## **INCOME APPROACH**

The income capitalization Approach is used to value commercial and investment properties. Similar to the methods used for financial valuation, securities analysis or bond pricing

## **COST APPROACH – SUMMATION APPROACH**

The theory is that the value of a property can be estimated by summing the land value and the depreciated value of any improvements. Buyer will not pay more for a property than it would cost to build an equivalent

**Valuation of Industrial Properties are done by Cost Approach Method**

# **Fixed assets**

- 1. Land**
- 2. Industrial Buildings**
- 3. Plants & Machineries**
- 4. Patents or Licenses**

# LAND

**An Industrial Land is always a larger extent land. Location: Industrial estates, Industrial Parks or in Town or City suburbs or village Panchayats. It depends upon the nature of pollution levels the unit may produce. Main requirements are electrical power, water, manpower, raw materials and transport facility.**

**The land is classified as an Industrial land. If these units are running one, question of conversion for other purpose may not arise. So the industrial land has to be valued as industrial land only. It cannot be valued with other land classifications. Any industrial process which is likely to be dangerous to human life are not permissible near a habitation. The property is always at a threat with the change in Government policies, regulations and Acts**

# LAND VALUE

In most of the places the industrial units may not be sold for many years or they are seldom (rarely) sold. Sale of units are generally due to labour unrest, change in government policies, acts, pollution factors, statutory acts and levies, environmental conditions and plants & machineries or process obsolescence. While valuing you have to consider the effect of Pollution Control Act, Factory Act, Building Bye Laws applicable, Size, Shape, Location, Infrastructure & Civic Amenities availability, scarcity and demand in the locality. **This affects the Realizable value of the assets.**

## **EXAMPLE -1**

**Location : TNSIDCO Industrial Estate, Thuvakudy, Trichy**

- 1. Land Selling Rate by SIDCO = Rs 2,99,98,900/- per acre**
- 2. TN Regn Dept Guideline rate for Thuvakudy Industrial Estate = Rs 700/- per sqft or Rs 3,04,92,000/- per acre**
- 3. Prevailing market price ranges from Rs 1,25,00,000/- to Rs 1,75,00,000/- per acre (Rs 281 to Rs 400/- per sqft)**
- 4. Prevailing market price of residential land surrounding the Industrial Estate = Rs 800/- per sqft on local enquiry (GLV Rs 400/- per sqft)**

# Case Study



**Land extent = 40 acres**

**Zone: Commercial / Industrial**

**Classification: Industrial land**

**Guideline Rate of nearby**

**residential plot: Rs 1200/- sqft**

**Market rate : Rs 1800/- sqft**

Assuming that this unit is in running condition for more than 40 years.

1. Whether we can value the land by comparable sale instances?

2. Since the land is used for specific purpose, can we assume the market rate of the nearby residential land of Rs 1800/- per sqft as the land value of this industrial land?

3. How to assess the value of this industrial land?

## **FACTS**

- 1. When land of an extent of 40 acres is offered for sale in an open market, no willing and prudent purchaser would come forward to purchase that vast extent of land on sq. ft. basis.**
- 2. Sale of bigger plot fetches less consideration than smaller piece of land.**
- 3. The nature and location of land, adaptability, advantages, the purpose for which the land can be used in the most lucrative way affects the value.**
- 4. For the potential / demand value, the locality, situation and size and shape of the land, the rise or fall in the value of the land in the locality, are the relevant factors.**



# **COURT JUDGEMENTS ON LAND VALUE**

**The Honourable Courts in India in its various judgments, has held a reduction factor ranging from 20% to 60% can be discounted while deriving the land rate of larger plot of land from smaller plots of land (Allahabad High Court Judgment: U P Avas Evan Vikas Parishad vs Smt Rukman Devi & Others on 23<sup>rd</sup> February 2016 - In that the Hon'ble Court citing various court judgments for reduction factors). The valuer while valuing can consider a reduction on the prevailing market rate of the particular industrial land.**

## **Comparable sales method of valuation of land for fixing the market value of the land is always concluding but subject to the factors:-**

**Sale must be a genuine transaction & sale execution must have been at the time proximate to the date of valuation**

**Nearness to in the vicinity of the industrial land**

**Land covered by the sales must be similar to the land**

**Size of plot of the land sold must be comparable to this land**

**Any dissimilarity in regard to locality, shape, site or nature of land between land sold and this land, valuer can consider the sale value with a reduction proportionately.**

**A comparable instance has to be identified having regard to the proximity from time angle & proximity from situation angle.**

**For determining the market value of the industrial land under valuation, suitable adjustment has to be made having regard to various positive and negative factors of the land.**

## **Factors considered for land valuation purpose**

**GENERAL FACTORS** : Proximity to a road, Frontage, Narrow strip with very small frontage compared to depth, Nearness to developed area, Probable open space reservation requirement, development charges, conditions & nature of land, provisions (under building rules) for roads, sewerage, electricity, parks, water etc., potentiality (demand & supply). If the depth is more when compared to frontage implementation of belting method.

Any change in the Government Policy decisions may affect the value. Even political uncertainty has some effect on the value.

**ADDITIONAL FACTORS FOR INDUSTRIAL LAND :** Pollution Control Act, Factory Act, and Building Bye Laws applicable will also add to the adverse effects of the land value.

If the unit is a Chemical Industry we may have more of deteriorative elements and the industrial land and the surrounding areas may get polluted. The effluent discharge norms play a major role in chemical industries.

The procedure for applying the principle of deduction to the market value of the land is quite consistent, though, of course, the extent of deduction has varied very widely depending on the facts and circumstances of a given case.

It is not possible to state precisely the exact deduction which could be made uniformly applicable to all the cases.

So the probable land value will be Market rate of the nearby area sold nearness to the time of valuation subject to the following Deductions **(May not be the same for all cases)**

1. OSR Area in case using Development method
2. Shape (land to be wasted)
3. Development cost (development charges, nature of development, the land required to be set apart under building rules for roads, sewerage, electricity, parks, water)
4. Nearness to infrastructure and civic amenities availability
5. Adoption of belting method if depth of the land is more when compared to frontage
6. Potentiality / Real estate Promoter's profit
7. Charges for contemplation of conversion of land to other uses like residential, commercial or mixed use
8. Effect of Pollution Control Act, Factory Act, and Building Bye Laws

# My opinion - the probable land value of 40 acres industrial land

Market rate of the nearby area per sqft

Less : Promoter's Profit @ 15%

Land cost per sqft

Deductions (May not be the same for all cases)

1. OSR Area using Development method	10%
2. Shape (land to be wasted)	1%
3. Development cost	30%
4. Infrastructure and civic amenities	2%
5. Adoption of belting method	10%
6. Potentiality / Demand	2%
7. Land Conversion charges to other uses	1%
8. Pollution Control, Factory Act & Building Laws	1%
9. Total Deductions	57%

Land rate to be adopted per sqft



Rs 1800

(Rs 270)

Rs 1530

(Rs 872)

Rs 658

# INDUSTRIAL BUILDINGS

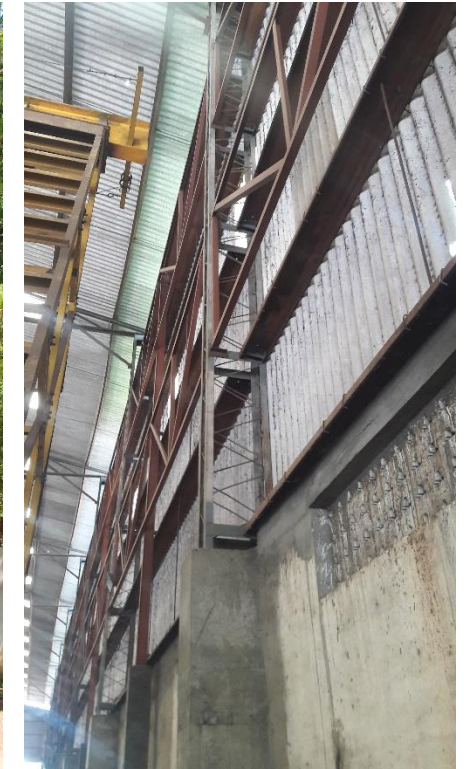
**Buildings** – RCC, MS, Composite & Utility Structures - RCC Tanks (UG or OHT), Cooling Towers, Transformer area, Tunnels, industrial floors or special floor

**Types** – Space Frames, Prefab Engineering Structures, Architectural, Industrial, Stadiums, Warehouses design, Cold Storage, flour mill

**Plinth Area Rates** - There is no defined PAR. Both State PWD & CPWD have not specified any PAR. PAR has to be derived for each structure as per technical specifications involved in that structure. PAR varies and may not be the same for all buildings and it differs from case to case.

# INDUSTRIAL BUILDINGS

Single bay Building structure with MS 40 mm angles with 8 mm rods columns, MS truss, C type purlins, AC sheet roof with AC sheet side cladding 4.0m & walls 4.0m height





# INDUSTRIAL BUILDINGS

Single Bay Portal frame type building structure with MS built-up columns, MS truss, MS purlins, Metal sheet roof with side cladding 4.0m & walls 3.0m height



# INDUSTRIAL BUILDING

3 Bays Prefab Building Structure with Prefab Columns, Raker Beams, Gantry Girder, MS Purlins & Metal sheet roof with 6.0 m Side cladding & side brick wall



# INDUSTRIAL BUILDINGS

**3 Bays Building Structure with RCC columns, RCC Gantry Girder, MS Prefab Raker Beams, MS purlins, Metal sheet roof with side brick wall 8.0m height**



# INDUSTRIAL BUILDINGS

**3 Bays Building Structure with Fully Plated Built-up MS Columns, MS Prefab Raker Beams, MS Gantry Girder, MS Purlins, Metal sheet roof & side cladding 8.0m height**



# INDUSTRIAL BUILDINGS

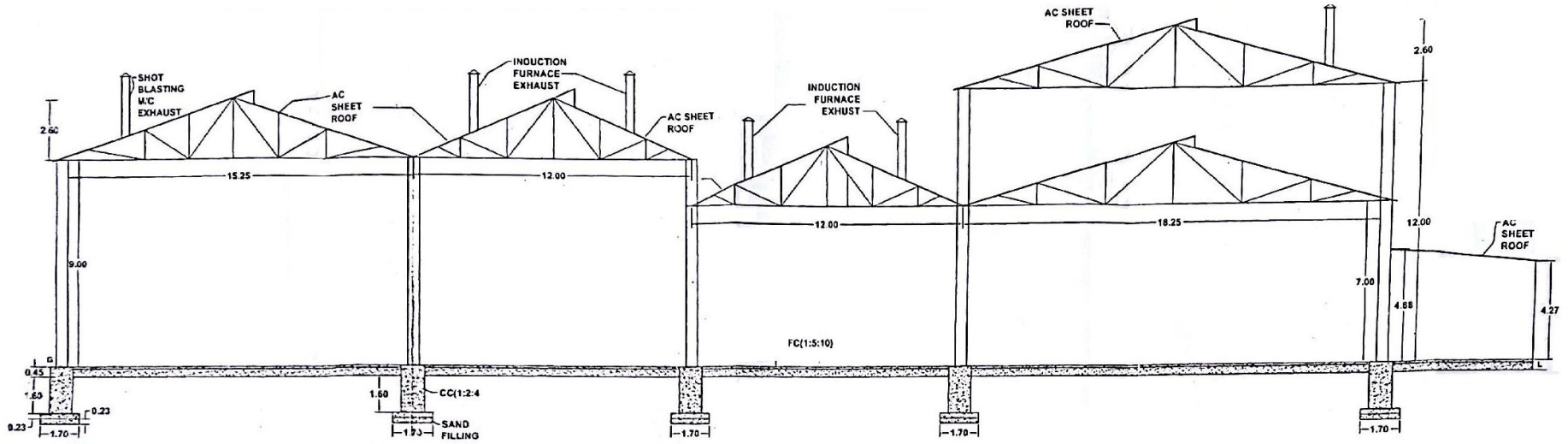
Building Structure with MS Columns,  
MS Truss, Mezzanine level RCC slab,  
AC sheet roof with side walls



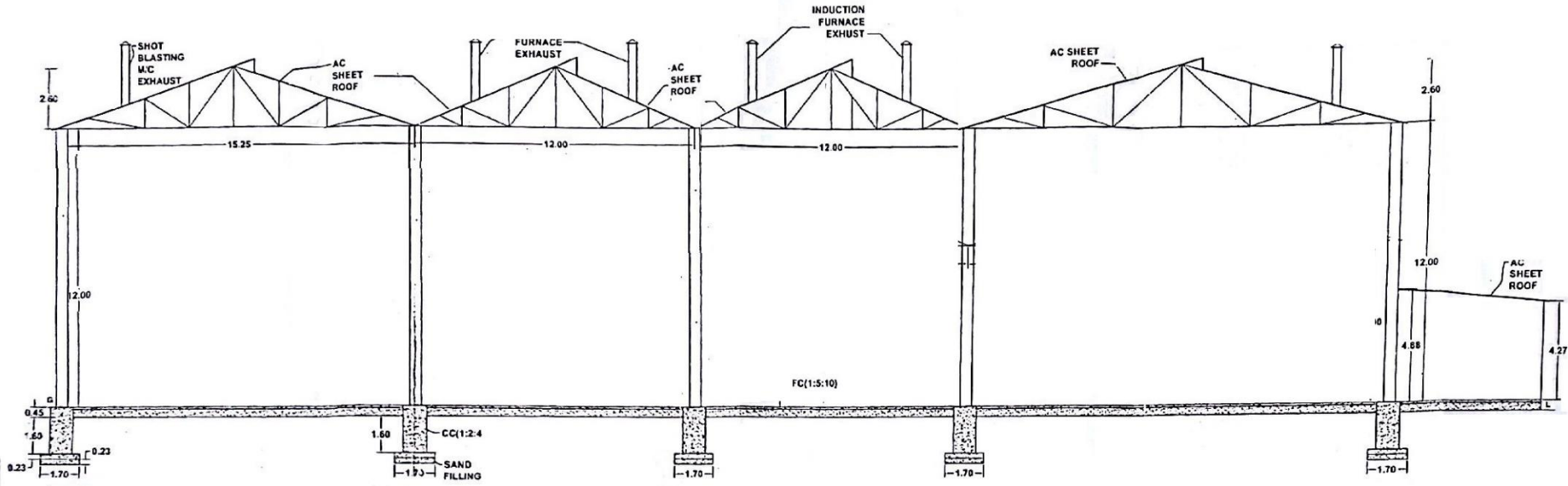
# INDUSTRIAL BUILDINGS

Multilevel Composite Structure with MS columns & MS beams (encased), RCC slab in each level, MS NL truss, AC sheet roof -side walls

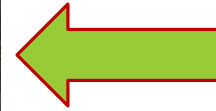




## Present Structure Section

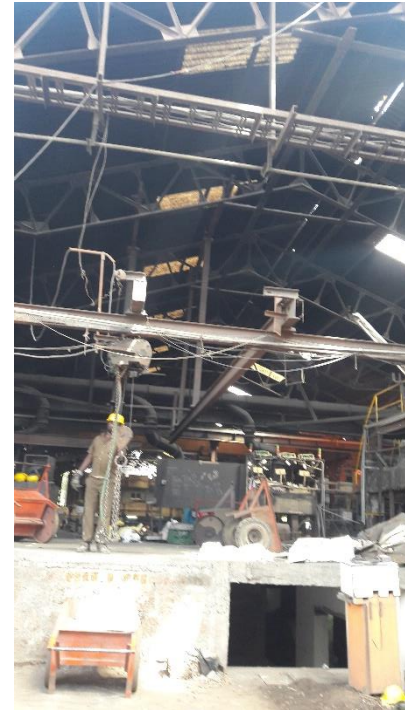


## Proposed Structure Section



Existing shed roof  
Eaves level 7.00 m

**Proposed Shed roof  
eaves level Height Increase  
from 7.00 m to 12.00 m  
Steel Columns extension  
and Steel truss replaced**

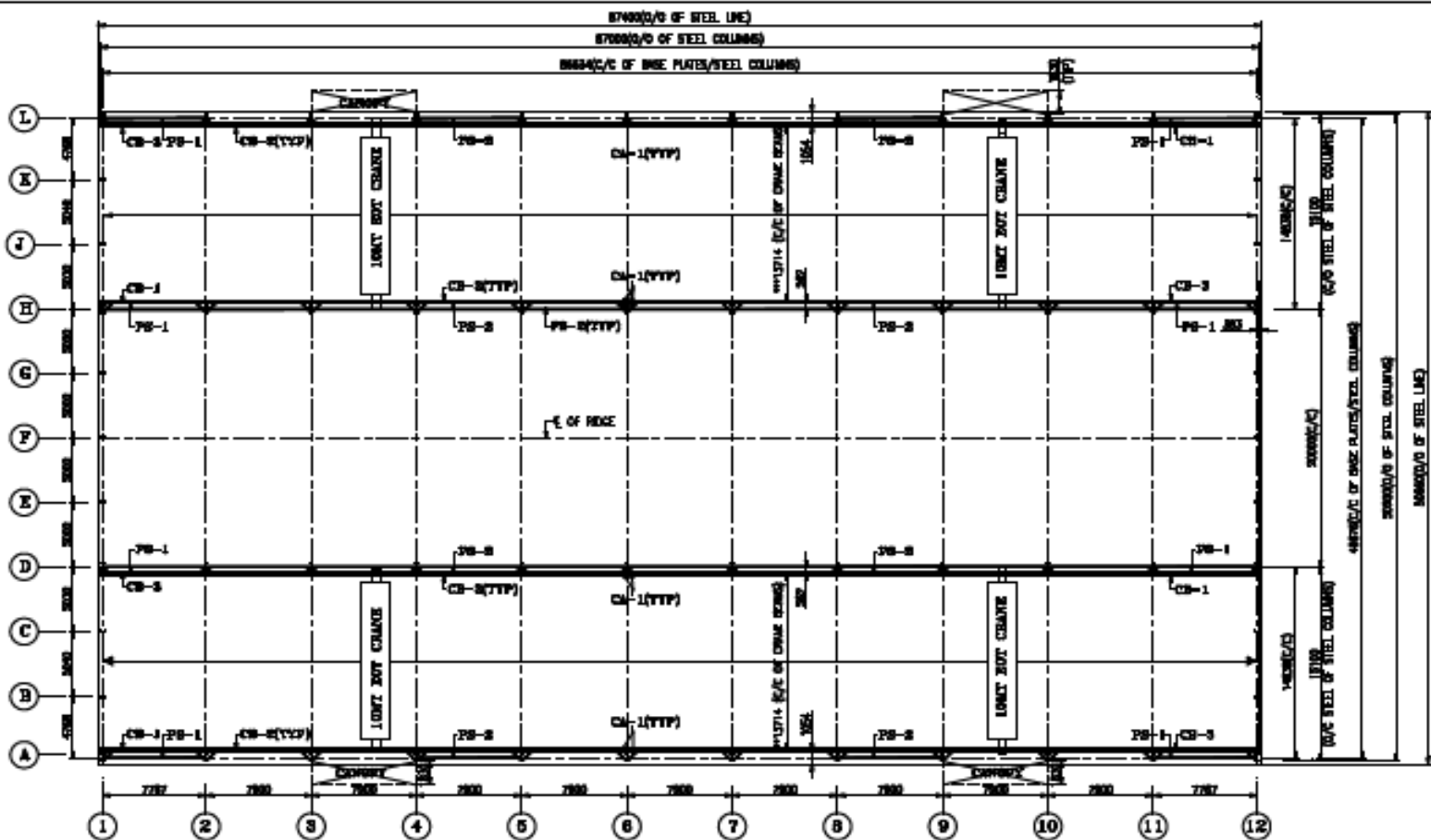




# **INDUSTRIAL BUILDINGS VALUATION**

## **DATA REQUIREMENT**

- 1. Column : TYPE –RCC / MS Steel / Prefab / Built-up / Composite / Span / Gantry level/ Eaves & Ridge level**
- 2. Truss : RCC / MS Steel / Prefab / Built-up / Span**
- 3. Gantry Girder: RCC / MS Steel / Prefab / Built-up**
- 4. Purlin: MS Steel / Prefab (Z OR C Type)/ Span**
- 5. Roofing : RCC/ Metal Sheet/GI/AC Sheet/Ridge/Gutters**
- 6. Side Cladding : Metal Sheet/GI/AC Sheet/Brick Wall**
- 7. Flooring : Ordinary Concrete/ RCC/ Thickness/Concrete grade / strengthening admixture used/ Special flooring -Epoxy & others**
- 8. Substructure: Strengthening below F L/ basement ht**
- 9. Column foundation: Isolated/ Combined/ Size/ Depth**



**GENERAL NOTES**

CRANE BEAM SUPPORT BRACKET IS PROVIDED WITH SLOTTED HOLES FOR EASY ASSEMBLY OF BRACINGS. ADJUSTMENT OF RAIL CARRIED OUT BY HOOK BOLTS. WHERE WELDED BAR RAILS ARE USED, THE ADJUSTMENT OF RAIL CENTERS ARE CARRIED OUT BY CRANE BEAM. AFTER ALIGNING, IF THE BRACING ANGLES DOES NOT FIT PROPERLY, WELD THEM AT THE COLUMN END TO THEIR RESPECTIVE CLIPS. SCRAPE PAINT AT WELDING AREA. REPAINT ALL FIELD WELDS.

\* CAP CHANNEL IS TO BE WELDED TO THE CRANE BEAM WITH 8mm THK WELD OF 100mm LENGTH @ 750mm C/C AFTER ERECTION.

**PLAN AT CRANE BEAM LEVEL**

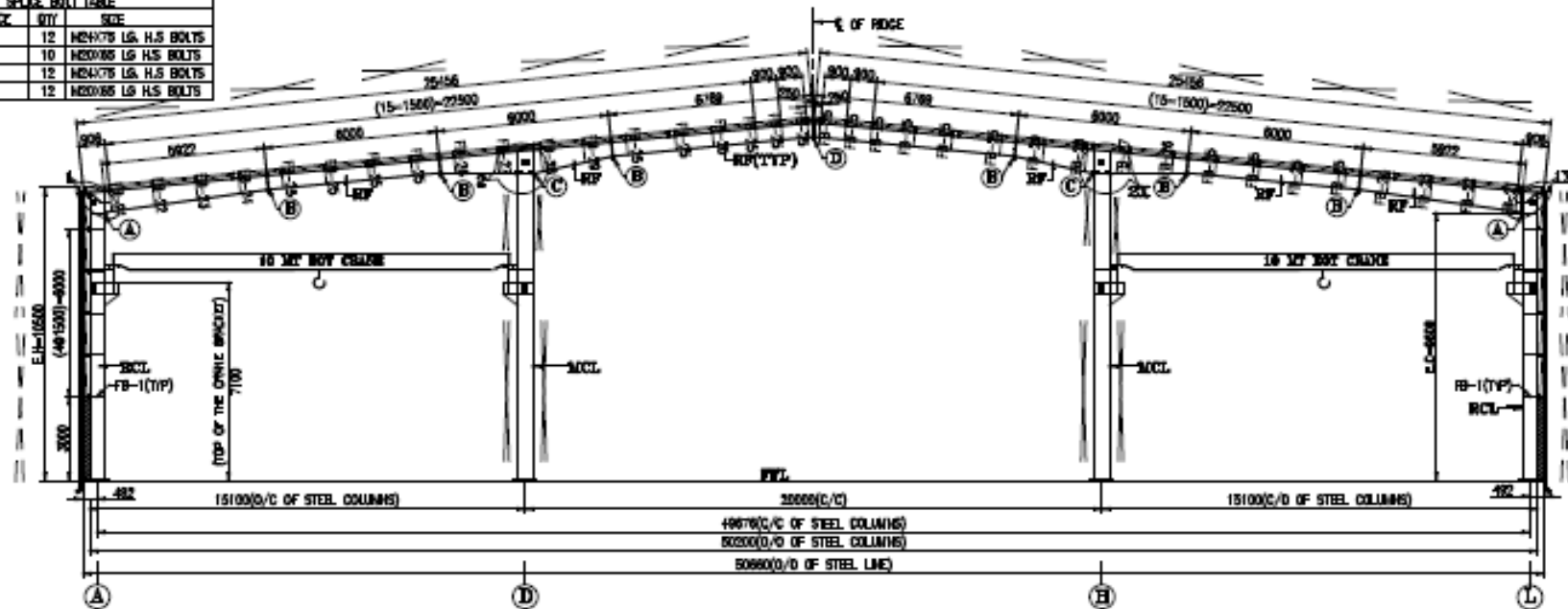
- ① \*\* C/C CRANE BEAM DISTANCE TO BE VERIFIED AT SITE BY CRANE SUPPLIER/MANUFACTURER.
- ② \*\* PLEASE CHECK THE ADEQUACY OF CRANE PROVISION WITH GIVEN HEIGHT.

DATE		SCALE		PROJECT	
C/LAYOUT REVISIONS		REV-01		REVISIONS MADE HERE AT CHECK	
NO.	DESCRIPTION	DATE	BY	CHKD.	APPD.
1	ISSUED FOR REVISION				
2					
3					
4					
5					

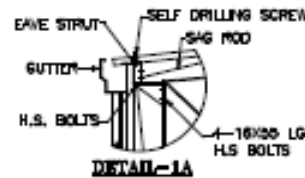
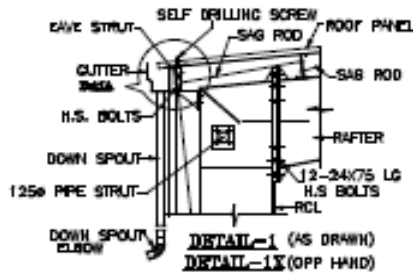
1. ALL DIMENSIONS ARE IN mm UNLD

PLAN AT CRANE BEAM LEVEL  
Date: 3-18  
Rev: 1

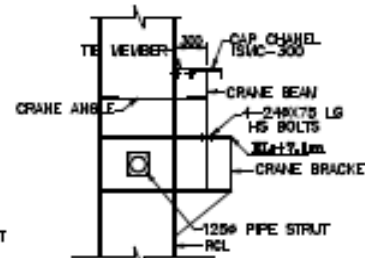
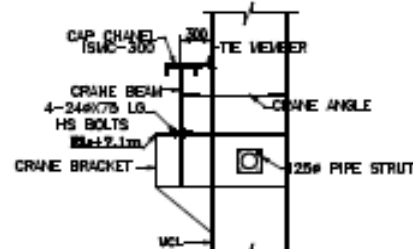
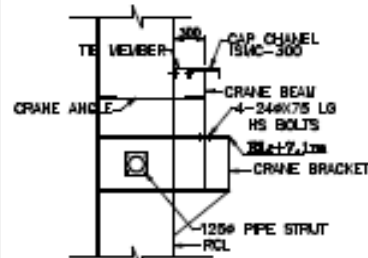
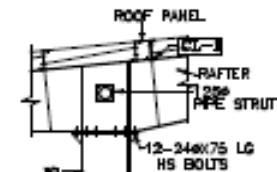
SPlice Bolt Table		
SPlice	QTY	SIZE
A	12	M24x75 LG. H.S BOLTS
B	10	M20x85 LG H.S BOLTS
C	12	M24x75 LG. H.S BOLTS
D	12	M20x85 LG H.S BOLTS </td



**RIGID FRAME CROSS SECTION AT FRAME LINES-2.5,6.7,8&11**



FB-1-911 LG	FB-25-887 LG
FB-21-1073 LG	FB-26-804 LG
FB-22-1024 LG	FB-27-1020 LG
FB-23-874 LG	FB-28-1105 LG
FB-24-826 LG	FB-29-882 LG



**TYP CRANE BEAM CONNECTION DETAIL AT GRID-B**

NO.	REVISION	DATE	BY	CHKD.	APP.	DATE
1	ISSUED FOR CONSTRUCTION	10/10/08	...	...	...	...

**TYP CRANE BEAM CONNECTION DETAIL AT GRID-A**

**TYP CRANE BEAM CONNECTION DETAIL AT GRID-D**

NO.	REVISION	DATE	BY	CHKD.	APP.	DATE
1	ISSUED FOR CONSTRUCTION	10/10/08	...	...	...	...

**RIGID FRAME CROSS SECTION AT FRAME LINES-2.5,6.7,8&11**



**STRUCTURAL STEEL REQUIRED FOR 87.40 METRE X 50.66 METRE (4427.68 SQM) SHED AREA**

No	Description	member	Nos-Items	Nos	length	Breadth	Total	weight/m or sq m	total weight
<b>I PREFAB COLUMNS</b>									
1	Rear column	ISMB 600	12	2	10.50		252.00	123.00	30996.00
2	Centre column	ISMB 600	12	2	11.25		270.00	123.00	33210.00
3	Base plate	25 mm Plate	12	2	0.90	0.60	12.96	199.20	2582.00
4	Base plate	25 mm Plate	12	2	0.90	0.60	12.96	199.20	2582.00
5	Cap plate	16 mm Plate	12	2	0.75	0.50	9.00	125.60	1130.00
6	Cap plate	16 mm Plate	12	2	0.75	0.50	9.00	125.60	1130.00
7	gussets plate	10 mm Plate	24	16	0.10	0.10	3.84	78.50	301.00
8	Gantry girder brackets	ISMB 300	72	1	0.35		25.20	46.10	1162.00
9	Brackets plate	16 mm Plate	48	1	0.75	0.30	10.80	125.60	1356.00
10	Gantry girder	ISMB 600	6	1	87.00		522.00	123.00	64206.00
11	Girder cap channel	ISMC 300	6	1	87.00		522.00	35.90	18740.00
12	Wind Bracing	ISMC 300	4	24	8.65		830.40	35.90	29811.00
<b>II PREFAB RAKER BEAMS</b>									
1	Raker Beam-750 / 500 x 180 x 6		12	2	11.33	1.085	295.03	47.10	13896.00
2	Raker Beam- 500 x 150 x 6		12	4	13.05	0.90	563.76	47.10	26553.00
3	Raker Beam-800 / 500 x 200 x 10		12	2	6.00	1.15	165.60	78.50	13000.00
4	Stitch plate	6 mm Plate	12	20	0.125	1.18	35.40	47.10	1667.00
5	Base plate	16 mm Plate	12	4	0.60	1.18	33.98	125.60	4268.00
6	Front closure	ISMC 150		6	2.50		15.00	17.70	266.00
<b>III PURLIN</b>									
1	Z Type purlins	200x60x20x2t kt		48	87.50		4200.00	5.65	23730.00
2	Z Type purlins	200x60x20x2t kt		8	50.66		405.28	5.65	2290.00
3	Z Type purlins	200x60x20x2t kt		4	12.00		48.00	5.65	271.00
4	Purlin cleats	ISMC 75		598	0.20		119.60	7.14	854.00
<b>TOTAL</b>									<b>274001.00</b>
<b>BOLTS &amp; NUTS AND WASTAGE</b>									<b>12999.00</b>
<b>TOTAL STEEL REQUIREMENT</b>									<b>287000.00</b>
<b>STEEL REQUIREMENT PER SQM</b>									<b>64.82</b>

## BUILDING VALUATION OF 87.40 METRE X 50.66 METRE SHED (4427.68 SQM)

No.	DESCRIPTION	QUANTITY	REPLACEMENT COST IN RUPEES	REPLACEMENT VALUE IN RUPEES	PERCENTAGE CONTRIBUTION
1	RCC M 20 GRADE ISOLATED FOUNDATION / CUM	346	9,000	3114000	8.71%
2	BRICKWORK WALL WITH BOTH SIDES PLASTERING / CUM	160	4,000	640000	1.79%
3	STRUCTURAL STEEL WORKS / M T	287	65,000	18655000	52.17%
4	GALVUME SHEET ROOFING & CLADDING / SQM	7000	300	2100000	5.87%
5	RCC M 20 GRADE INDUSTRIAL FLOOR 300 MM THK / SQM	4500	2,500	11250000	31.46%
6	BUILDING VALUE OF 87.40 METRE X 50.66 METRE			35759000	100.00%
7	<b>CONSTRUCTION COST PER SQ M (Year 2012)</b>			<b>8076</b>	

**Amenities and Ancillary structures** - roads, storage yards, machine equipment foundations, industrial flooring, and other facilities for workers as per industrial norms along with the Services add to the property value.

The above features will be reproduced in the Approved Drawings certified by the Inspector of Factories while issuing the License to the Unit.

Any change or modifications or manufacturing process activity done within the unit has to be necessarily approved by the Inspector of Factories. So the Unit will be having the updated version of the approval drawings.

Most of the units may not have a local body approval drawing. So the Valuer has to insist on Approved Drawings certified by the Inspector of Factories

# Salvage value

Depreciation is derived by Straight line method

$$\text{Depreciated Value} = \text{Replacement Value} \times \frac{\text{Building Age}}{\text{Total Building Life}} \times (100\% - \text{Salvage Value})$$

Salvage Value plays a major role on the forced sale value.

The second sales rate of MS steel structures when sold in the open market will fetch more value unlike RCC structures.

So while assuming the depreciation much weightage is given for salvage percentage on the structure.

Only while inspecting the structure, the Valuer may come to a conclusion and decide on the percentage of salvage value, whether the structure can be sold at a second sale rate or scrap rate.



## EXAMPLE-1

The Building is a machine shop built in 1954, with R R masonry walls, MS roof truss and purlins with AC Sheet roof.

Since it is 62 years old building, what will be Depreciated Value and salvage value?

Salvage value has to be determined according to the site conditions.



## **EXAMPLE -2**

**COLUMNS: 40 MM MS Angles & 8 MM Rods**

**MS TRUSS : 50 MM MS Angles**

**PURLINS : C Type 200 MM X 60 MM X 2 MM**

**AC Sheet Roof / Side Cladding 4.0M Height**

**5 years old Structure**



**A poorly designed Structure. You can see the MS Truss is sagging in the middle. Improper maintenance. Corrosion on the truss portion. Bare columns & purlins without even primer paint coat is seen. Structure Weight : 3.50 Kg / sqft including columns, truss, purlins**

**Salvage Value will be only scrap value**

## INDUSTRIAL UNIT PROPERTY VALUATION FOR BANK SECURITY BY BANK PANEL VALUER

DESCRIPTION	PLINTH AREA	REPLACEMENT VALUE IN 2005 IN RUPEES	DEPRICATED VALUE IN 2005 IN RUPEES	PRESENT VALUE IN 2005 IN RUPEES
-------------	-------------	-------------------------------------------	---------------------------------------	------------------------------------

**ASSUMPTIONS MADE :** MS STRUCTURE, CC INDUSTRIAL FLOOR, 45 YEARS OLD, FUTURE LIFE 15 YEARS, TOTAL LIFE 60 YEARS, SALVAGE VALUE 10%

MAIN FACTORY BUILDING @ Rs 600/ SQFT	85,000	510,00,000	<u>344,25,000</u>	165,75,000
<b>BUILDING VALUE AS ON 2005</b>				<b>165,75,000</b>

## INDUSTRIAL UNIT PROPERTY VALUATION FOR LIQUIDATION PURPOSE BY II VALUER

DESCRIPTION	PLINTH AREA	REPLACEMENT VALUE FOR LIQUIDATION IN 2007 IN RUPEES	DEPRICATED VALUE FOR LIQUIDATION IN 2007 IN RUPEES	PRESENT VALUE FOR LIQUIDATION IN 2007 IN RUPEES
-------------	-------------	--------------------------------------------------------------	----------------------------------------------------------	-------------------------------------------------------

**ASSUMPTIONS MADE :** MS STRUCTURE 680 MT, RCC INDUSTRIAL FLOOR, 47 YEARS OLD, FUTURE LIFE 13 YEARS, TOTAL LIFE 60 YEARS, SALVAGE VALUE 35%

MAIN FACTORY BUILDING @ Rs 600/ SQFT	85,000	510,00,000	<u>248,62,500</u>	261,37,500
<b>BUILDING VALUE AS ON 2007</b>				<b>261,37,500</b>

**Reproduction** refers to reproducing an exact replica;  
**Replacement cost** refers to the cost of building a structure or other improvement which has the same utility, but using modern design, workmanship and materials.

For many industrial securities, it is the standard practice of the Financial Institutions to insure the assets collectively.

When any untoward incidence happens, for claiming the insurance, they have to project the insured value of the particular building or structure for which they may require the

**Reproduction Cost on the day of construction and Replacement Cost for the new building constructed for the same purpose**



**In a textile product manufacturing unit, the Finished Goods Warehouse Building of 31528 sqft, constructed in 2005, was razed to the ground due to fire disaster on May 2013. A new Warehouse was constructed in the same place with new foundations, columns, wall and roof structure in 2014. The company was directed to get the Reproduction Cost for the old building in 2005 and Replacement Cost in 2014 for Insurance purpose.**

The Old building was a 2 bay hall type building.

The specification was MS steel angle trusses and MS flat 8 mm thick with 6 mm MS rods purlins and aluminum sheet roofing over RCC columns with brickwork up to 30 feet height at eaves level.

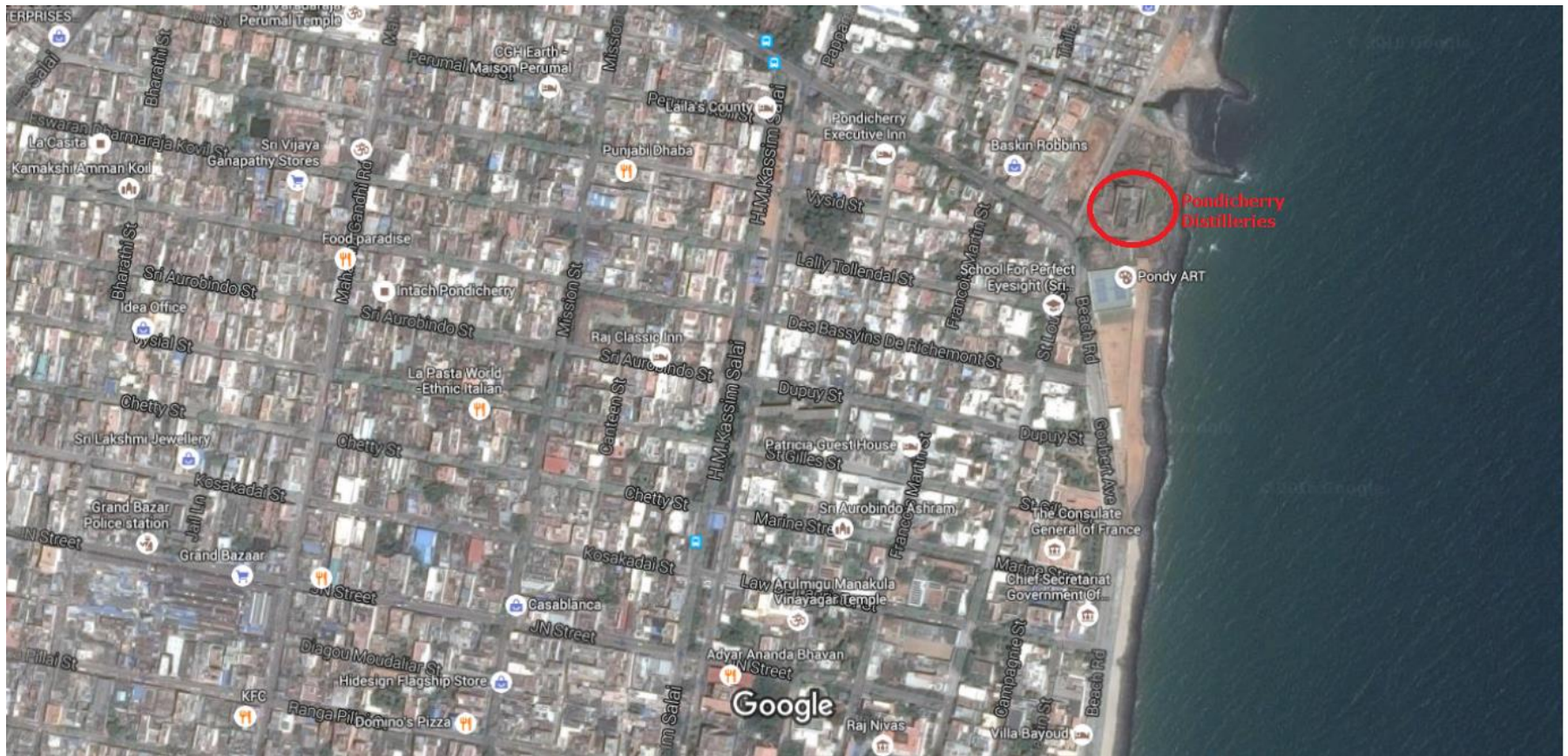


Entire building including the RCC columns were razed by fire. The aluminium roofing sheets melted away. The scrap value was only steel twisted angles. When the cost of construction was worked for 2005, the **Reproduction Cost worked to Rs 325/- per sqft.**

The **Replacement Cost for 2014 worked out to Rs 450/- per sqft**

# POLLUTION CONTROL BOARD'S POWER

A Government owned Distillery unit located in Pondicherry beach in the heart of the city. Production commencement in 1960. Effluent discharge into the sea by pipe lines.



**Modernization was carried out in 1986, for a total estimated cost of Rs 150 lakhs. It was carried out with new ETP. There was a writ petition in the High Court and unit was shut down. The case was for effluent discharge in to the sea. The Government lost the case. Shifted the unit 10 kms away from the city limits.**





## **FACTORY ACT**



**Inspector of Factories License and Machinery Layout Plan Approval is a must for running an Industrial Unit.**

**Sometimes, due to work pressure, the workers try to utilize the plants & machineries to the optimum extent causing hazards.**

**Inspector of Factories have every power to suspend the functioning of the unit.**

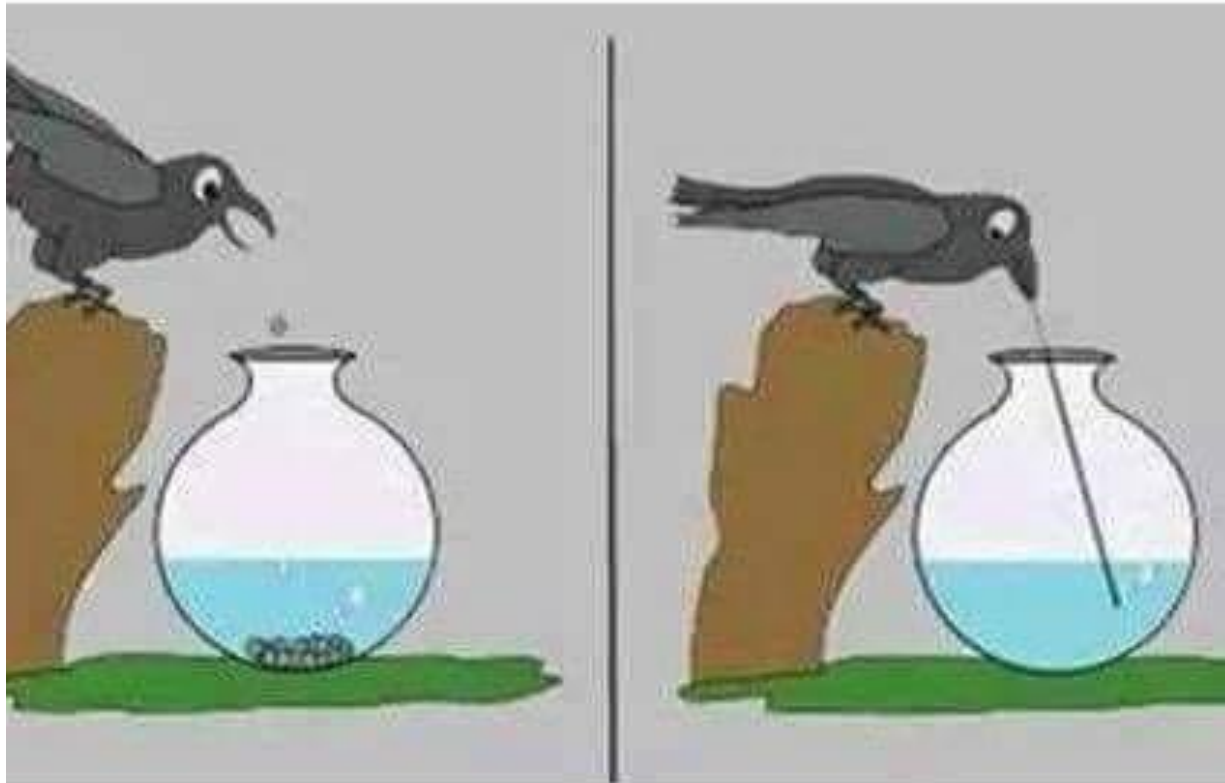


# CONCLUSION

**We the valuers have to develop a capacity to create and use the technology. Technology can provide the means of modifying the environment. We must address the problems in a professional manner and find a clear cut solution to the problems. We must be systematic and objective, for the analysis and design techniques. The industrial property valuation can be made on various factors. A conservative valuation will help the valuer, while defending him in case of any eventuality.**

**Old Crow**

**Modern Crow**



**Keep Upgrading your skills**

**THANK YOU**