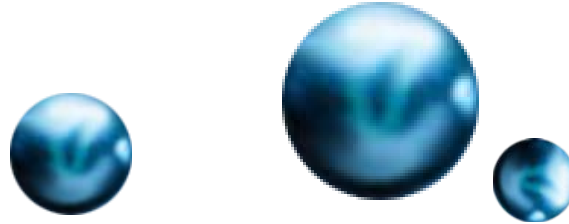
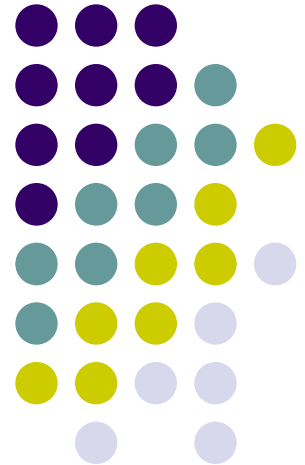


# Indian Stainless Steel Sector Challenges & Opportunities



***FICCI Meeting with Steel Secretary  
Shri P.K.Mishra ,IAS  
21<sup>st</sup> September 2010***

**Presentation By  
N. C. Mathur  
Co-Chair FICCI Steel Committee  
Advisor JSL Stainless Ltd.**



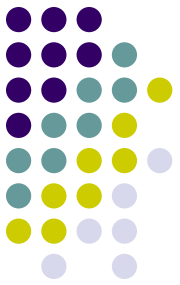


# Stainless Steel Production

Year 2009 in '000 metric tons

● Region	Year
● Western Europe/Africa	6,449
● Central+ Eastern Europe	237
● The Americas	1,958
● Asia w/o China*	7,130
China	8,805
<b>World</b>	<b>24,578</b>

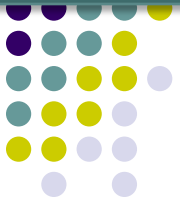
\* (India 2 Million tons-8% of world production)



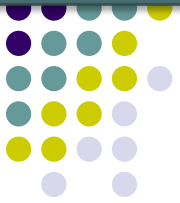
# Stainless Steel Production

●	Year 2010 in '000 metric tons		
●	Region	Qrt 1	Qrt.2
●	Western Europe/Africa	2,081	2,222
●	Central + Eastern Europe	73	89
●	The Americas	728	671
●	Asia w/o China	2,178	2,178
●	China	2,607	2,862
●	World Total	7,625	8,023

**2010 H-1 Production 15,648**



- Global downturn had impact on India, but recovery was fast
  - Projected GDP growth @8-9% over next 5 years
  - **Overall Steel Consumption to grow at 1.2 times GDP**
- **Planned Infrastructure Investment in 5 years: USD 440 billion**
  - Power
  - Railways / Urban transport
  - Urban Infrastructure
  - Ports / Airports
  - Gas pipeline



- Global meltdown/Overcapacity impacted demand and prices.
- **High cost raw material inventory— Nickel, SS Scrap, Moly.**
- Most producers made losses in 2008-09 and faced liquidity crunch.
- The domestic market size remains largely un-affected.
- Government stimuli helped demand revival.

# SS Growth Drivers - India

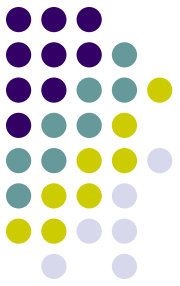
Railways

Architectural  
Building &  
Construction  
Airports

Industrial

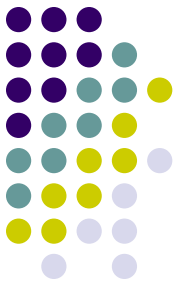
- Power
- Process Industries

Automotive  
White Goods



## A.R.T.

- Automotive, Railways and Transport Sector



## Stainless Steel *City Transport Delhi Metro*



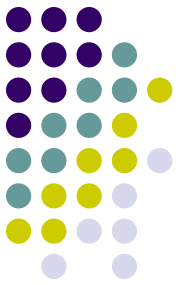
Delhi Metro Rail Corporation  
- A Success Story

Similar projects are undertaken in other major cities like Mumbai & Bangalore.



*All Stainless Steel Coaches*





# Stainless Steel *City Transport Delhi Metro*



Escalators & Handrails

## Delhi Metro Station



Dividers



Bench

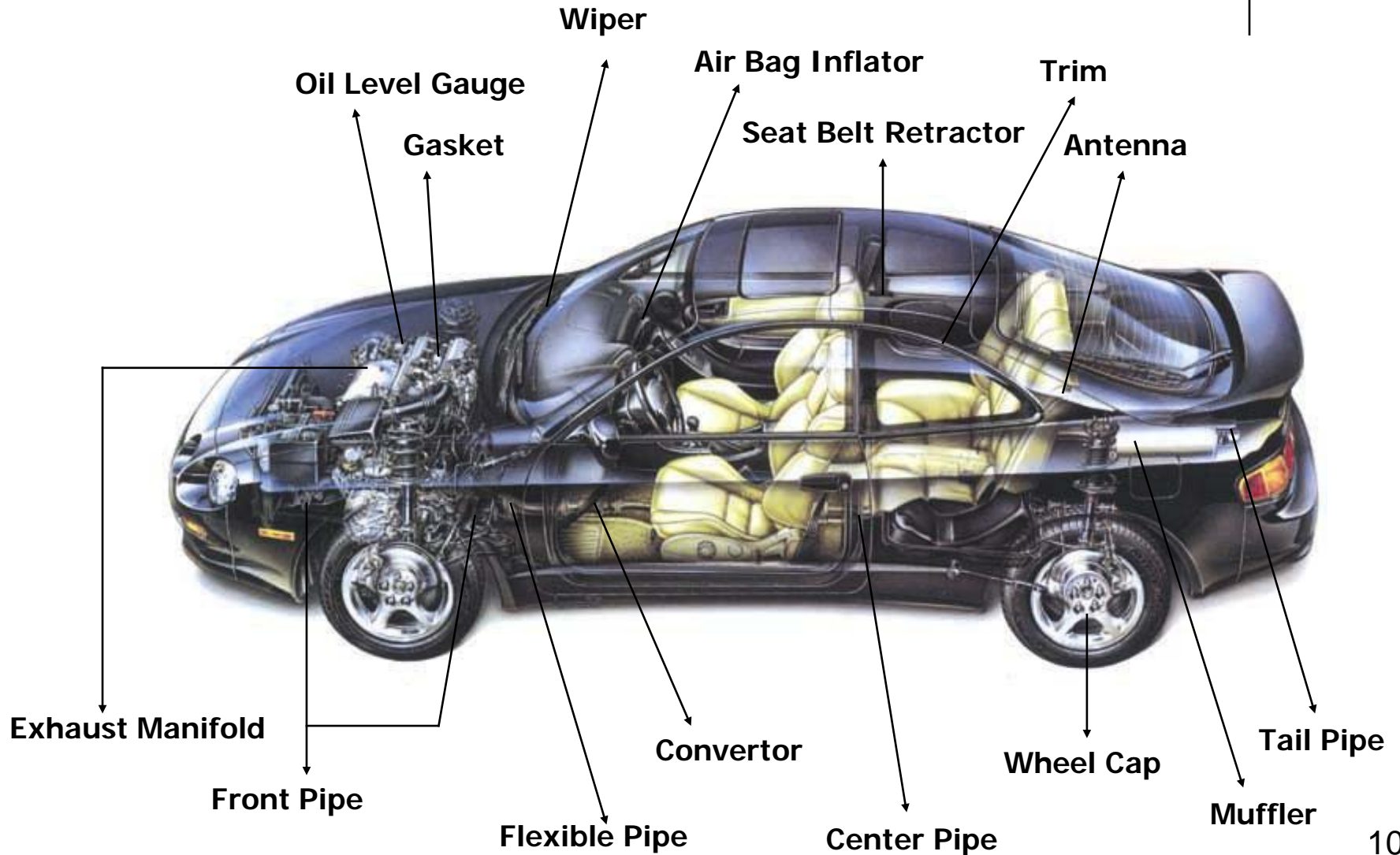


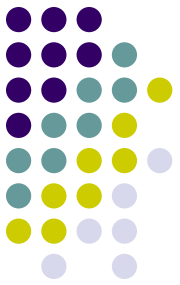
Information Board



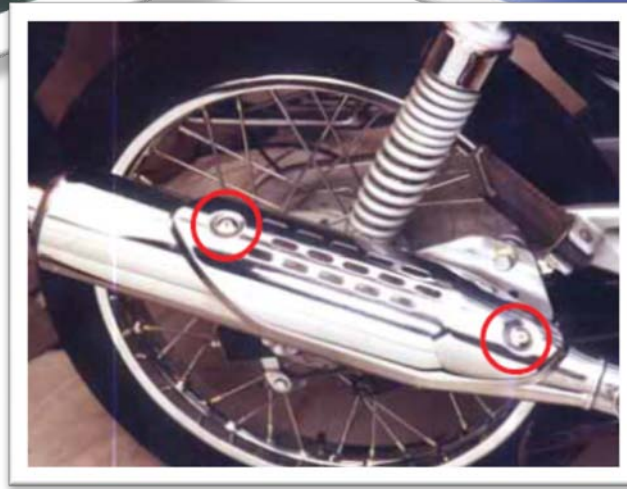
Dustbin

# ***Applications - Auto***

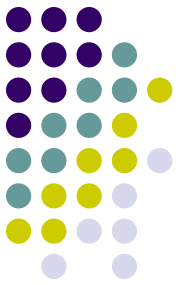




# ART-Sector





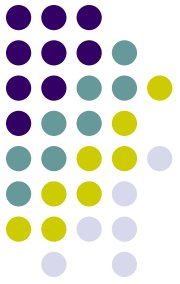


- **Passenger Coaches and Wagons**

## Indian Rail SS Showcase



# Stainless Steel in Urban Infrastructure



- ☐ Street Furniture
- ☐ Art & Sculpture
- ☐ Sports Stadium
- ☐ Airport
- ☐ City Transport



# Street Furniture

# Stainless Steel *ABC - Street Furniture*



**JSW Steels, Karnataka**

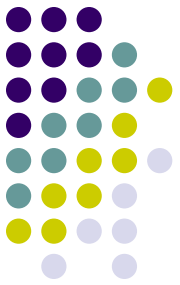


**Chankyapuri, New Delhi**

**Bus Shelters**



# Stainless Steel *ABC - Street Furniture*



**New Stainless Steel Bus Shelter on Ring Road, New Delhi**





Sculpture

Railings

Benches

Litter Bins

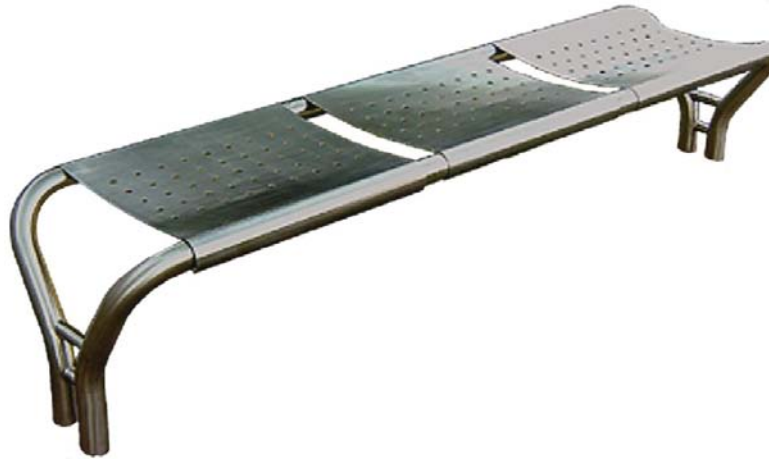
Signage

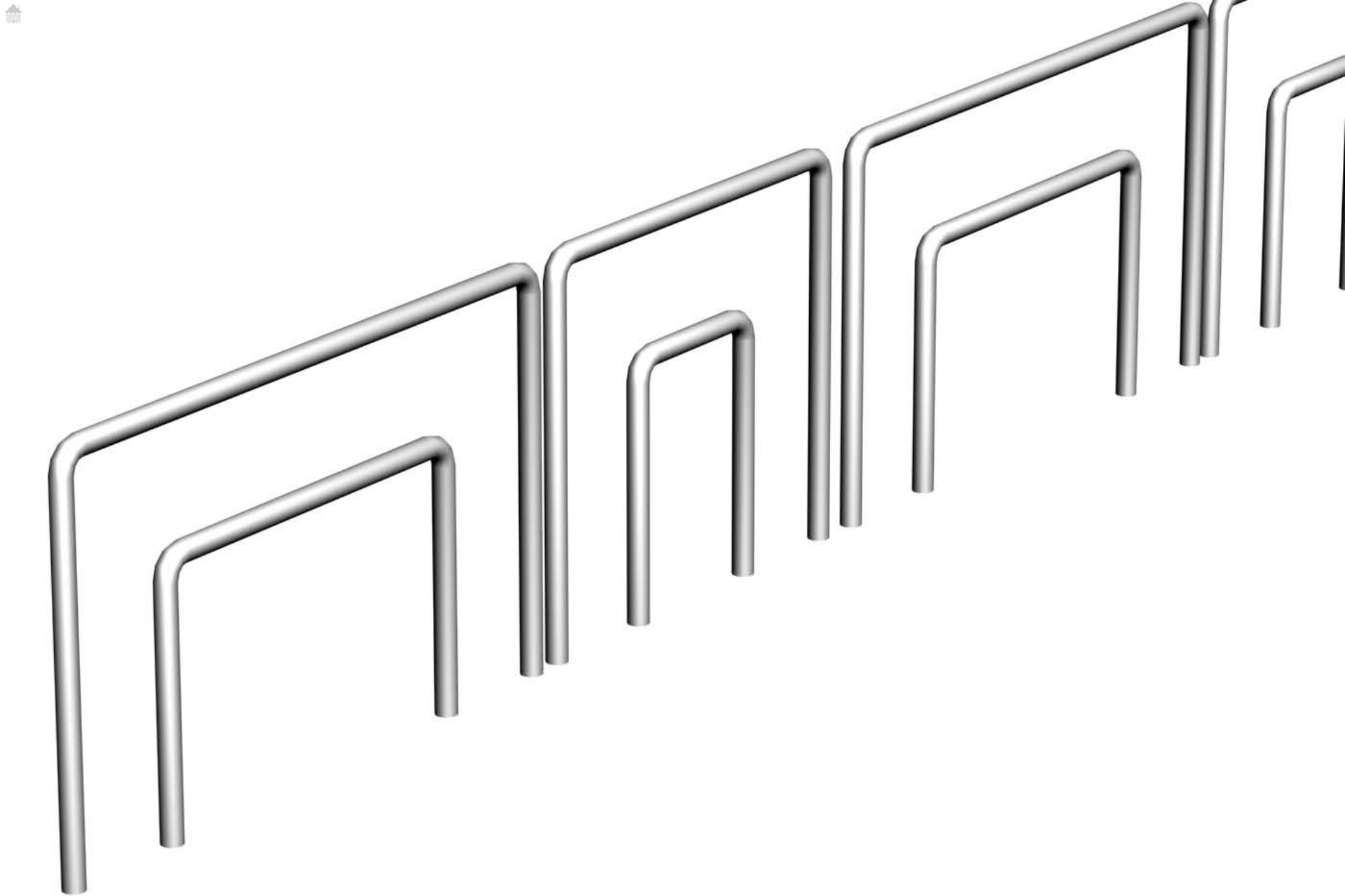
Barricades

Entry Gate



# Benches





BARRICADES

S.S SCULPTURE IN WATER BODY







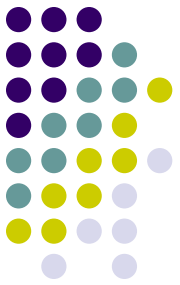
S.S RAILING

# Stainless Steel *ABC - Street Furniture*



Dustbins





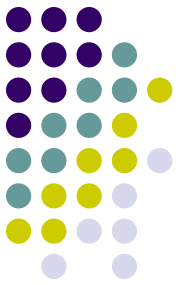
## ENTRY GATE





# DIRECTIONAL SIGNAGE





# Stainless Steel ABC - Street Furniture

*Walkeshwar, Mumbai*

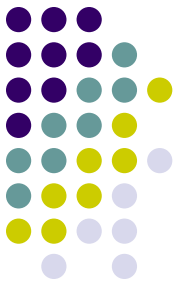
*Case Study*



Site before Installation



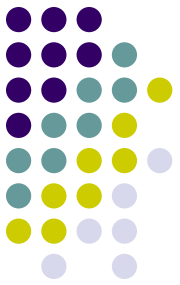
# Stainless Steel *ABC - Street Furniture*



**Public Convenience**



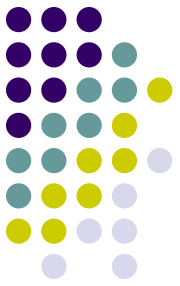
**Paper bin + Ashtray**



## **New Design for Letter Box ( I.I.T. IDC Mumbai )**

**INDIAN POST**

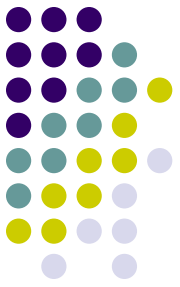




# Art & Sculptures



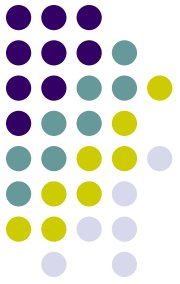
# Sculptural Gateway, Raigarh



- The 33m high gateway is India's tallest architectural marvel in Stainless Steel, weighing about 20 metric tonnes at Raigarh, Chhattisgarh.
- The structure consists of framed 273mm dia pipes in 304 grade joined together with connections in a hyperbolic parabolic shape.

*Developed by Jindal Stainless Arc Division*

# Stainless Steel Sculpture



Architect: Malcolm Robertson



Unitech, Calcutta

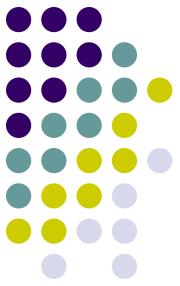


JNU, Delhi

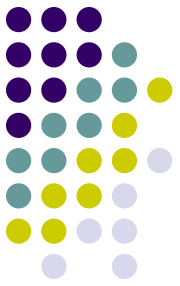
Architect: Jatin Das

*Developed by Jindal Stainless Arc Division*

# Stainless Steel Sculpture



**Mural at the  
cargo  
terminal of  
Chennai  
Port**



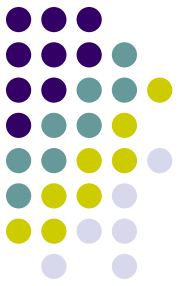
# **Around the Globe**

## **Public Display for City Beautification**



# Stainless Steel Sculpture

Millennium Park  
Chicago



*Cloud Gate* sculpture ("The Bean")

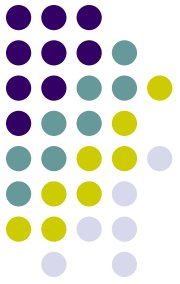
20 m long, 10 m high, 4 m clearance underneath

168 polished Type 316 stainless steel plates, joined seamlessly together



Artist: Anish Kapoor

# Stainless Steel Sculpture-Asia





# Stainless Steel Sculpture-Asia

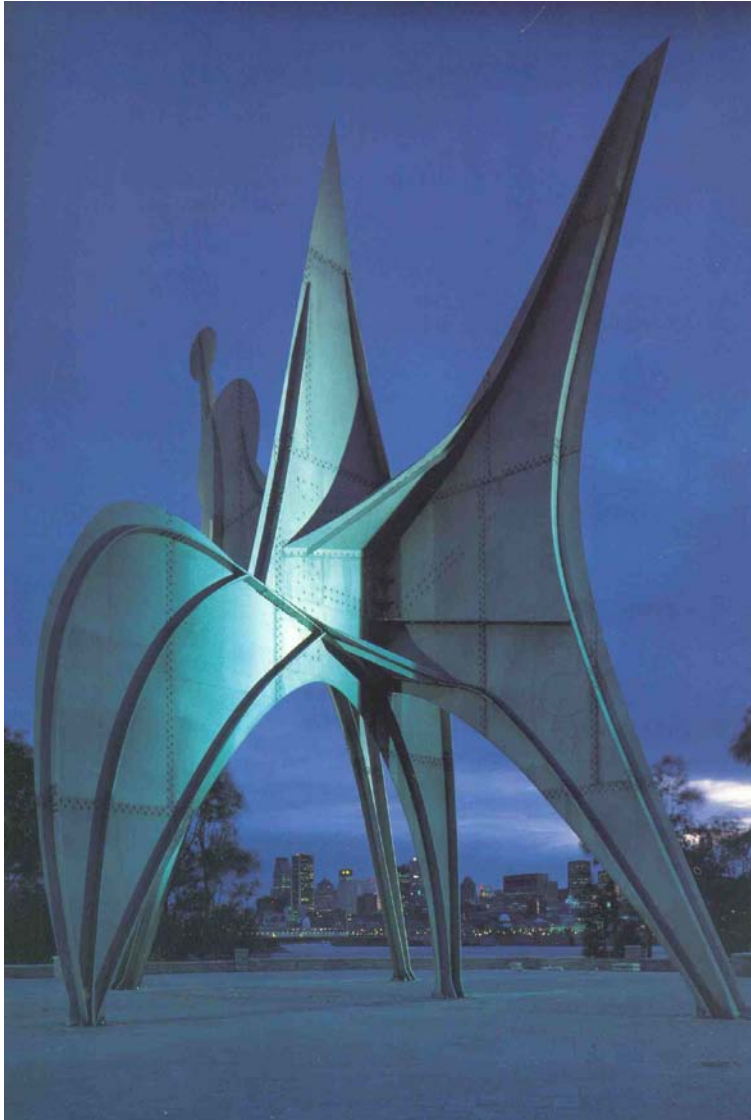
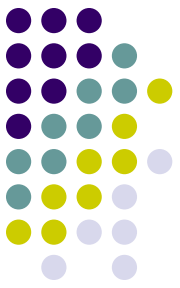


# ***Stainless Marvels***



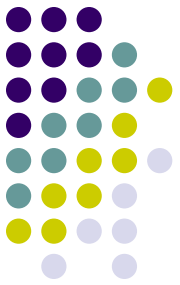
**Hungry God – Italy**

# Stainless Steel Sculpture in Canada (left) and India (right)





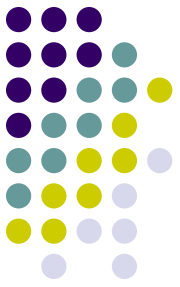
# Stainless Steel *Signages*



**A great opportunity for Stainless Steel Applications**

# Stainless Steel

## *ABC - Street Furniture*

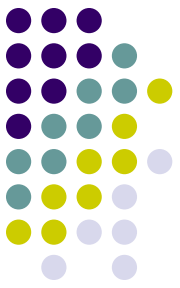


**Ramoji Film studio, Hyderabad**



# Stainless Steel

## Play Ground Equipment-New Ideas





# Development of AIIMS Garden



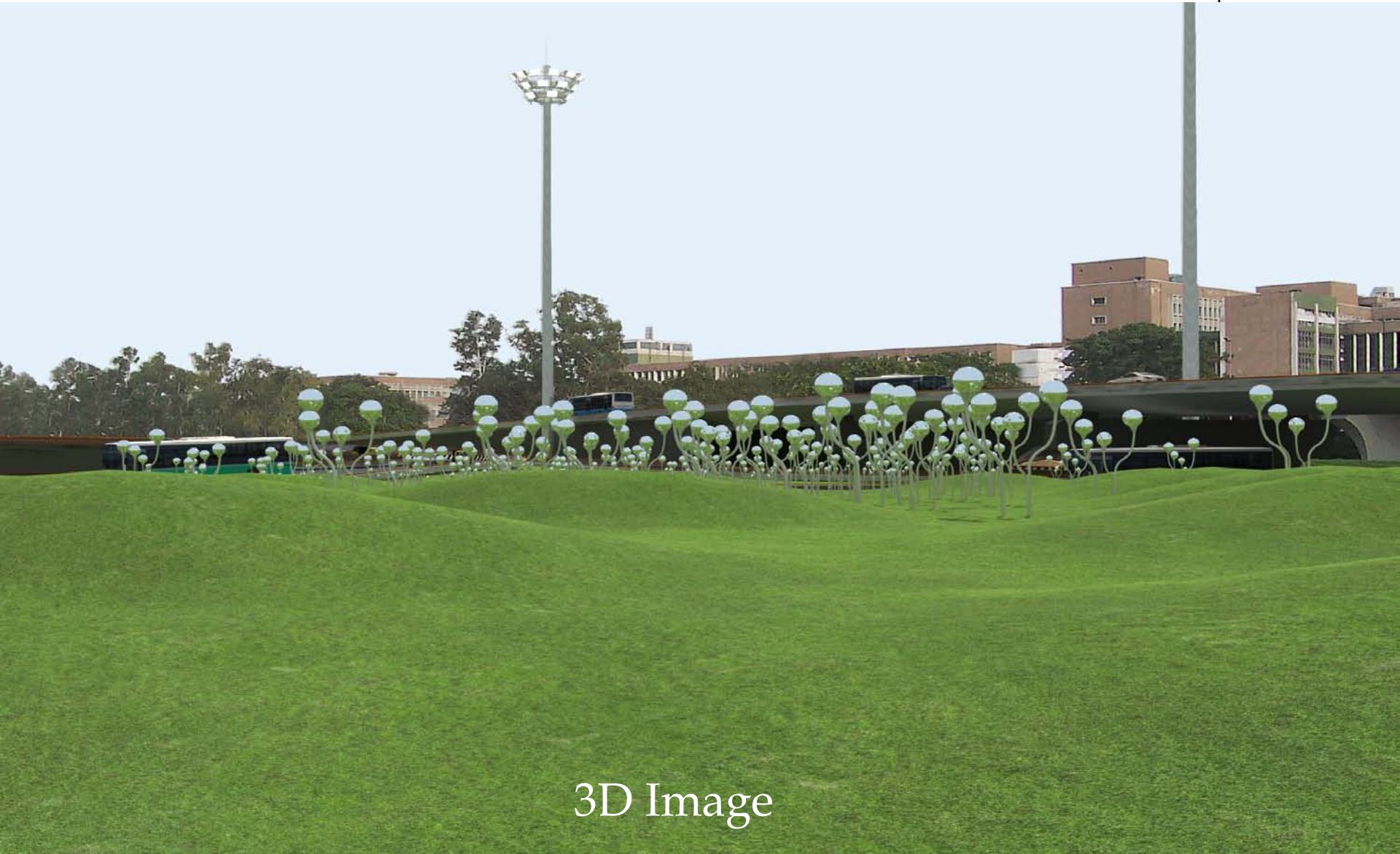


# Development of AIIMS Garden

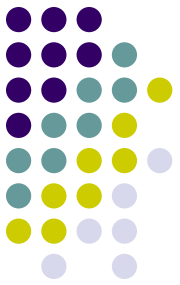


3D Image

# Development of AIIMS Garden



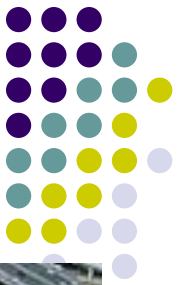
3D Image



# **Stainless Steel in Stadium Architecture**



# Stainless Steel Stadium



**Telstra, Sydney, Australia**



**Dragon Stadium, Portugal**





# Stainless Steel Stadium



Beijing Olympics 2008 Games, Infrastructure



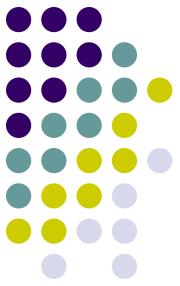
# Torch Stand, Naruto, Japan



Olympic Track and  
Field Stadium

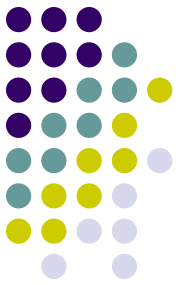


# AIRPORT INFRASTRUCTURE



- **UPGRADES..DELHI..GMR-MUMBAI..GVK**
- **UPGRADES BY A.A.I. (Many Airports)**
- **GREENFIELD..HYRERABAD..BANGALORE**
- **NEW T-3 Terminal at IGI Airport New Delhi**





# Stainless Steel ABC – Airport Infrastructure

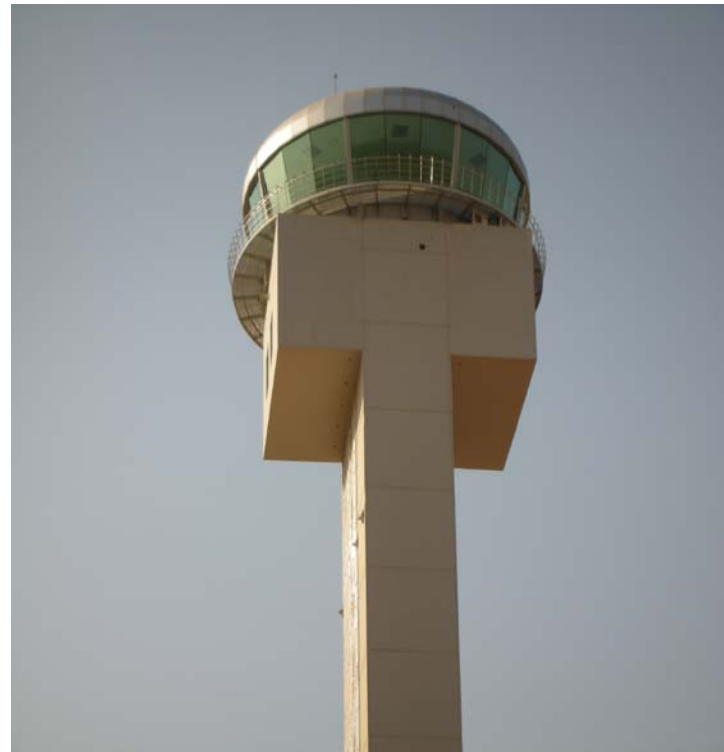
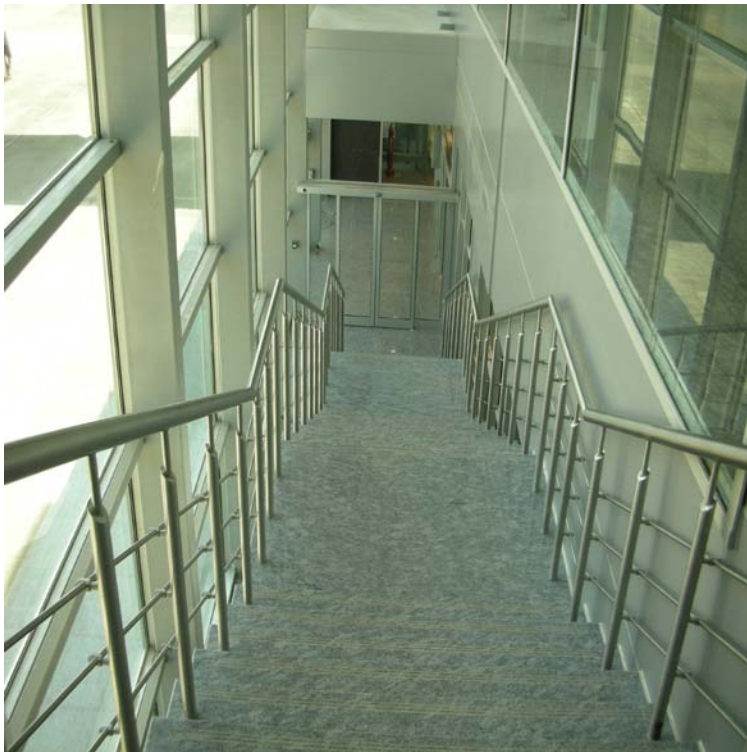


New International Airport Hyderabad



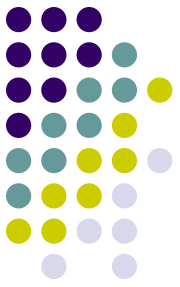


## Stainless Steel *ABC* – Airport Infrastructure



New International Airport Bangalore





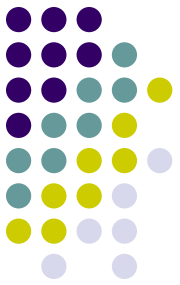
- New Delhi IGI AIRPORT T-3 Openning



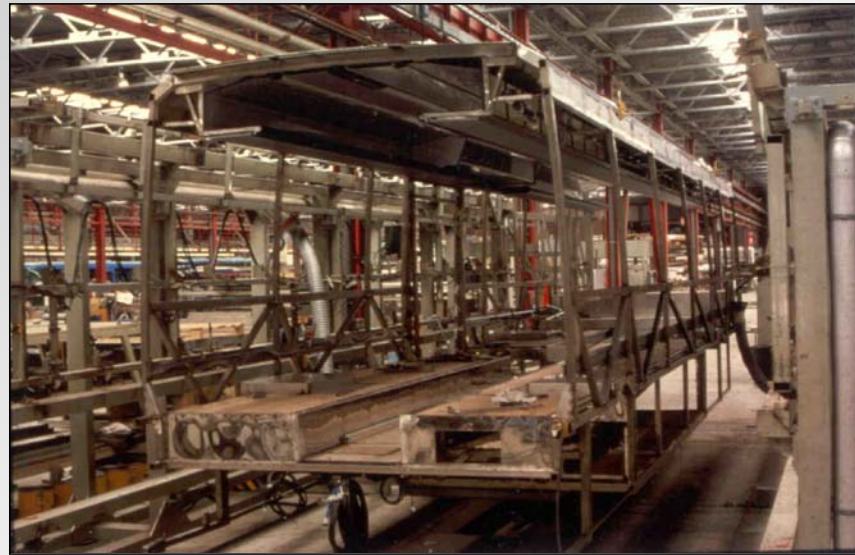
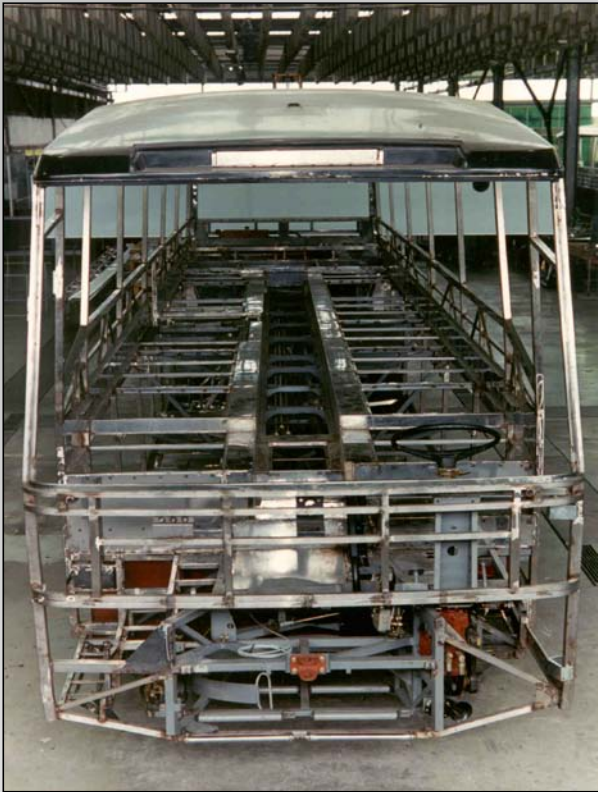


# Future City and Tourist Buses

- **Stainless Body & Structural Parts**
- **Lower Life Cycle cost**
- **Italian Case Study....**

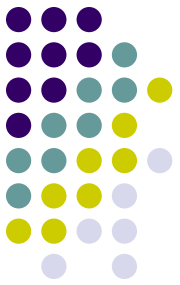


## The various phases of the fabrication process (2) (De Simon factory)

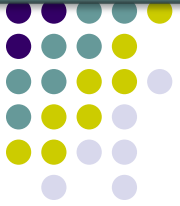




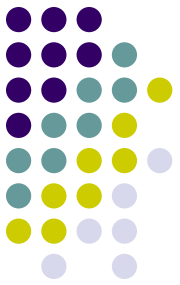
## Some examples of the final result (by De Simon)



# Challenges Ahead



- **Inadequate Infrastructure – Energy, logistics, ports etc. not conducive to growth of manufacturing sector**
- **Infrastructure projects subject to delays and financial constraints**
- **Budget constraints vs. Life Cycle benefits of Stainless Steel**
- **Dependence on imports for certain raw material – Nickel, SS Scrap , Moly**



# *Changes we can expect*

## Railway

- Metro in major cities
- Railway Wagons
- Coach Up-gradation
- SS usage in Platforms

## Increasing ABC applications

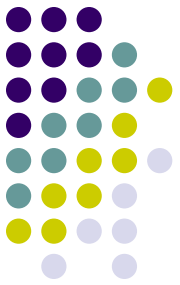
- Selective Rebar's
- Door & Windows
- Cladding
- Signage's
- Street Furniture
- Fasteners
- Life Style products

## India as export hub for

- Auto Components
- Appliances
- Mill Products
- High Quality Value Added Engineering Products



# Conclusions



## *Indian Stainless Steel Market*

- SS Production will be 4 Million Tons by 2015
- SS Consumption to grow by 9-10 %  
Growth in SS Consumption is about 1.2 Times GDP
- New applications will emerge very fast
- Various opportunities for business
- SS will change the face of India
- The journey begins.....

**Towards Brighter & Beautiful Living!**

---

***Leaving You with a Stainless Thought...!***

***Thank You for your interest.....***

[ncm@jindalsteel.com](mailto:ncm@jindalsteel.com)

