



TURKISH CONSTRUCTIONAL
STEELWORK ASSOCIATION

Development of the Steel Construction Sector in Turkey 2000-2010

Ö. Selçuk Özdil

TUCSA – Member of the Board

23/09/2010 - Istanbul

In September 2000

- We were together in Istanbul
- TUCSA had ECCS presidency
 - Our gratitude and remembrances for late Prof. Arda
- We had a good symposium



Why Turkey could not Build in Steel in 2000?

- Strong RC culture
- Steel construction was un-known
- Long List of important missing things in the sector

Strong RC Culture

- Building culture: Strongly concrete
 - Turkey: A big cement producer
 - A very strong concrete lobby
- RC was cheap
 - and quality was to improve
- General contractors were ruling the construction sector - a big minus.

Steel Construction was Un-known

- Prejudices
 - Steel was thought to be
 - For only industrial buildings
 - or, only very high buildings
 - Steel would be expensive
 - Fire would be a problem
 - Fire code even intended to say it burns
 - Corrosion would be big problem
 - There would not be enough capacity to build in steel
- Not many applications were visible
- SWCs were also un-known

Important Things were Missing

- Owners with sense of economy
- Know-how for construction economy
- Financing for construction
- Architectural detail know-how
- Structural design competence
- Fire design
- Steel Work Contractors (SWCs)
- Availability for structural steels
- Production of structural steel

Owners with a Sense of Economy were not Common

- Cheap was best
 - Cost would only be measured per m²
 - High tech or high quality did not pay
- Anything they built would sell

Construction Economy was Highly Neglected

- Fast track construction concept was outlandish
- Construction Managers were un-known
 - GCs dictated the construction technology
- Basic economic intuition had not developed
 - Time was not money due to lack of financing
- Compared different architectures to be equal

Financing for Construction did not Exist

- Banks were not lending for construction
- Cash was needed from investor
 - Therefore speed meant more money demanded from owner's cash flow

Design Know-how was Missing

- Structural steel was un-known as construction material to most of the designers
- Architects or engineers did not like to confess this deficiency
- No body would notice this deficiency

Structural Design Competence was Insufficient

- Design capacity was under-developed
 - Concentrated in a few designer offices
- Designers were shy to use rolled sections
 - Imports were perceived to be exotic
 - They distrusted availability saying:
“There is no local production!”

Fire Design was Problematic

- No proper local fire code
- No fire engineers were available for design consultancy
- No affordable design tools were available

Steel Work Contractor Capacities were Low

- They were few in number
- Capacities and productivity were low
- Most were not independent
 - Most were affiliated to big general contractors

Availability for Structural Steels were Insufficient

- No stocks for modern sections
- Imports only
- Production of structural steel
 - Almost all rebar
 - Limited and crippled IPN, UPN production only
- Producers claimed:
"There is no demand!"

Change Agents of 2000

- 1999 Earthquake...
 - Very strong, very near Istanbul
 - New seismic code - 1998
- TUCSA
 - Was becoming active
 - Steel Weeks and Steel Days started
 - Steel Structures Magazine Started
- ARBED
 - Persistent on structural steel marketing
 - Was just starting the first HE and IPE stocks in Istanbul
 - Continued with Arcelor / ArcelorMittal



Changes from 2000 to 2010?

- TUCSA worked hard as an IPO
- Pioneering stocks created demand beginning 2000
- Demand ignited production capacity increases
- More structural designers started using rolled steel
- More architects started using structural steel
- Steel Work Contractor expertise and capacities increased
- Today structural steel availability is good
- We have real real-estate developers and investors
- Construction Managers are numerous
- Banks started providing financing
- As a result number of applications have increased

TUCSA Worked Hard as an IPO

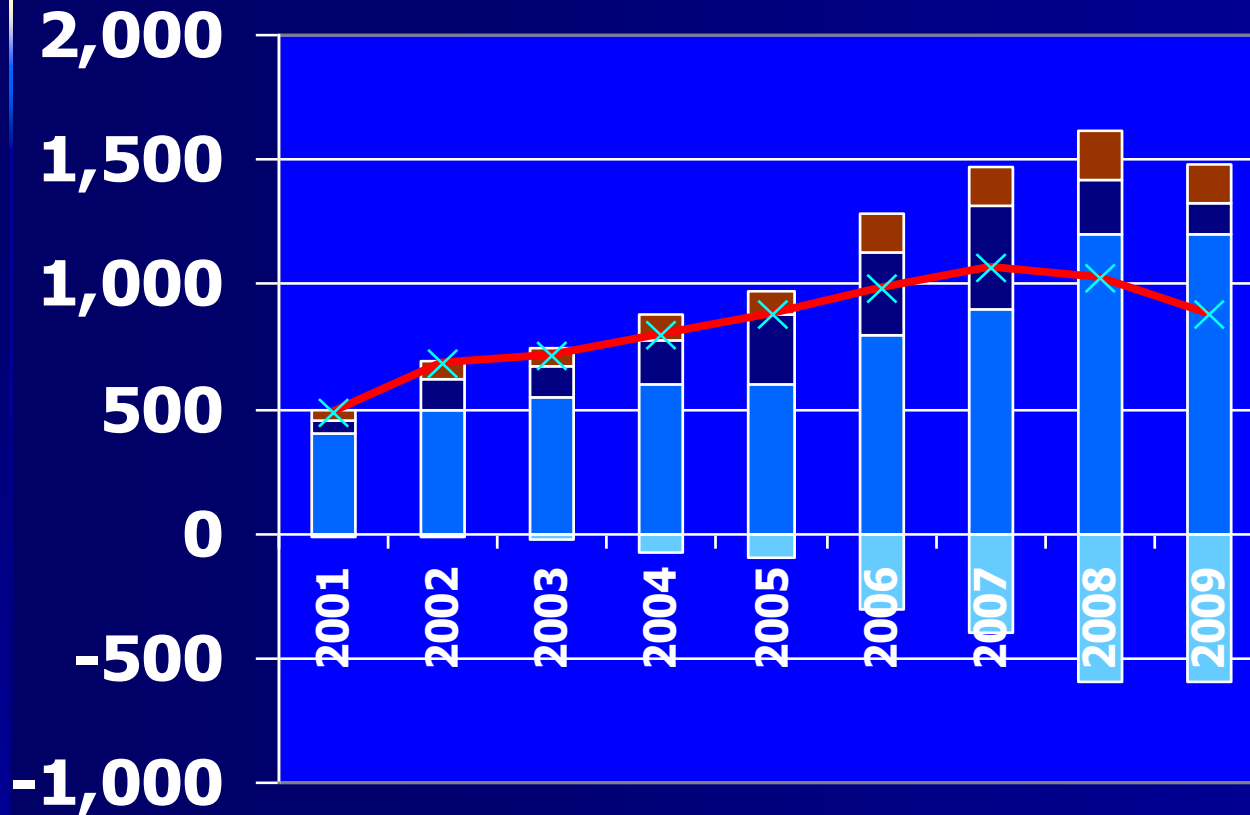
- Promotional work...
 - Seminars, Visits
 - Diverse
 - Architects, Engineers
 - Chambers, Unions, Universities
 - Professionals, Students
 - Wide spread
 - All around Turkey
- Publications: Magazines, Seminar notes, Books
- Steel Construction Specifications
 - EN 1090-2 and TUCSAMark are now integrated
 - Building Certification in the Future
- Members supported and complemented promotion activities



Pioneering Local Stock Keeping Created Demand



Evolution of Structural Steel Market



Demand Ignited Domestic Production Capacity Increases

- Due to demand for structural steel, domestic production has increased
 - Re-rollers started
 - Integrated mills followed
- Today good production of medium HE and IPE sections
 - Production mix is becoming more balanced and value added
 - Increasing structural steel exports
 - More capacity is coming



More Engineers Started Designing in Structural Steel



eration is coming up

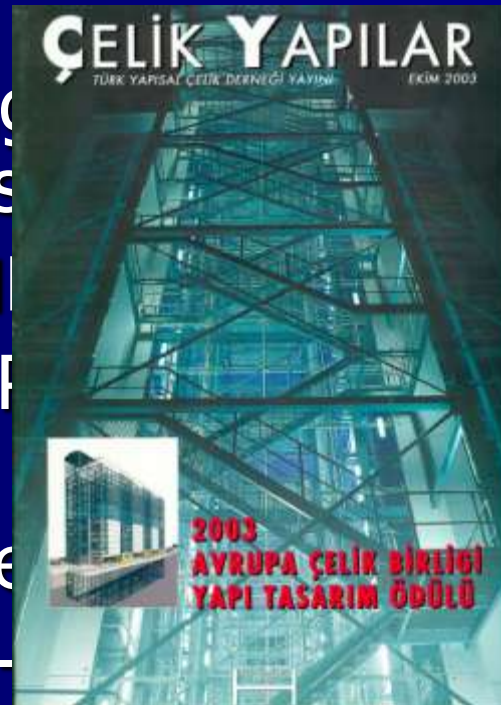
eng of s

H

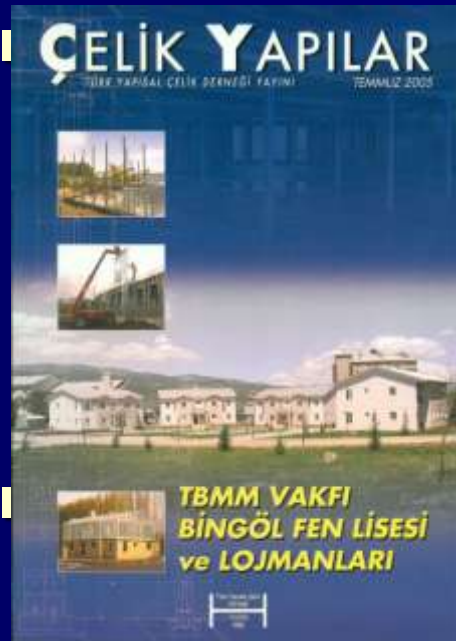
UP

OTTICES are be

- OTTICES are be
 - CAD –CAE–
 - Becoming more affordable



More Architects Started Designing in Structural Steel



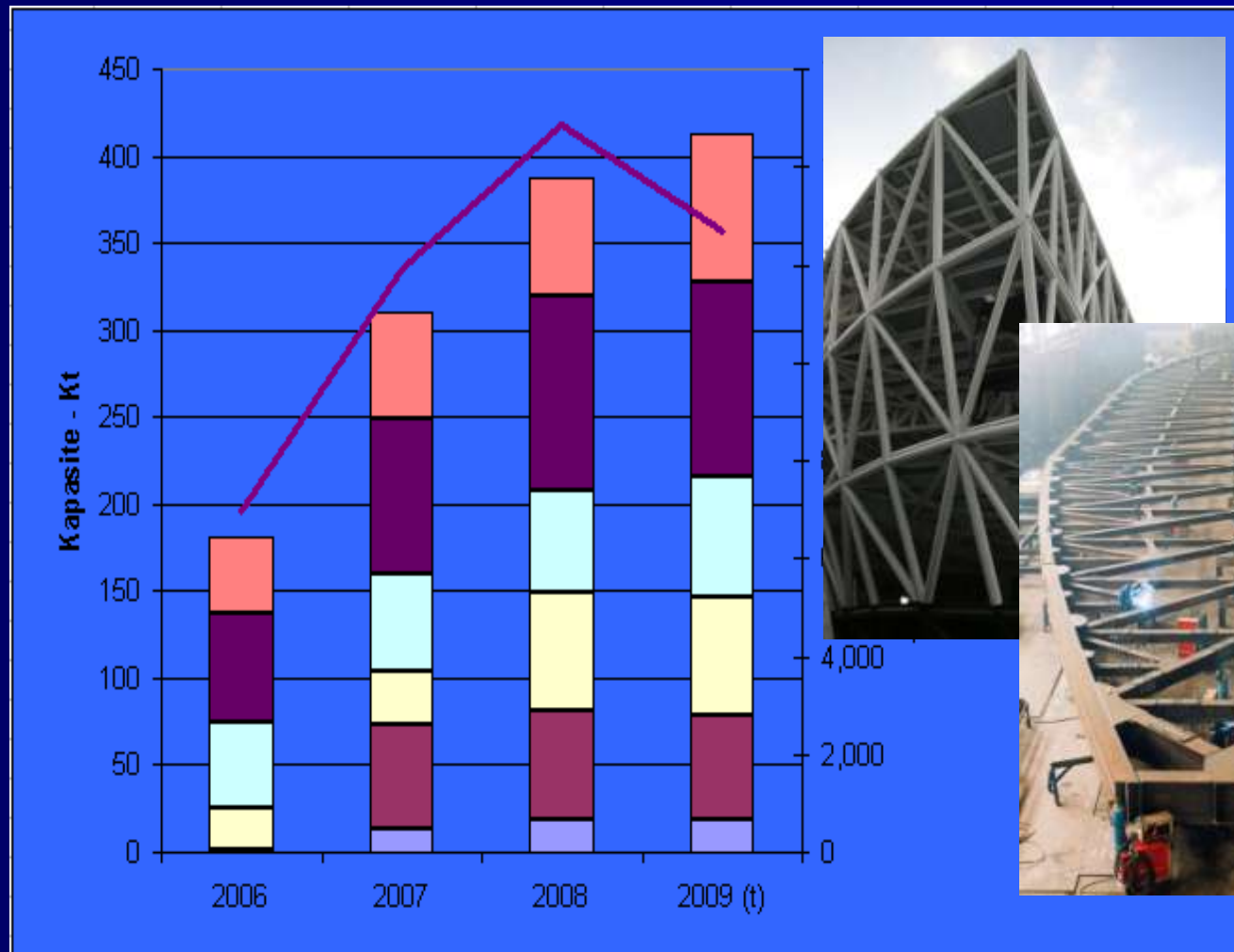
- Number of applications increased...
- Steel culture is increasing...

Steel Work Contractor Capacities Have Increased



- Problems with unqualified competition

Capacity Evolution of TUCSA Member Steel Work Contractors



Structural Steel Availability Became Satisfactory

- Structural steel availability is good
 - Choice of sections
 - Qualities
 - Domestic production
 - Imports
- Structural building materials are available
 - Bolts nuts
 - Composite decking
 - Shear studs



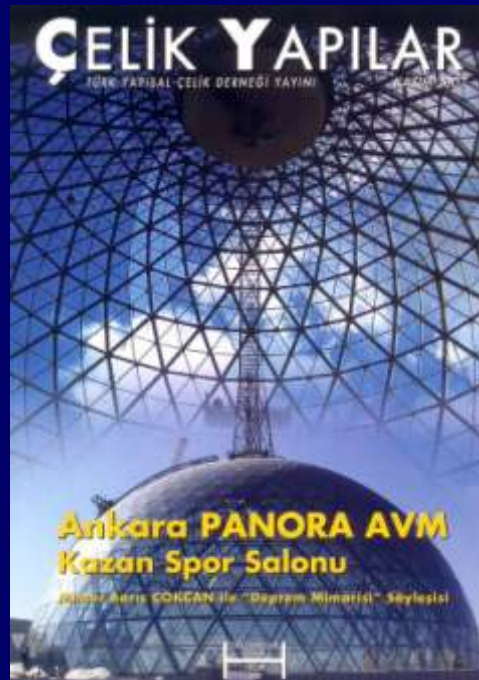
Economic Arguments Started Making Sense

- We have true real-estate developers and investors
 - Europeans mostly
 - Domestic investors started emerging as well
- Construction Managers are increasing
 - Foreign developers and investors seek their services
 - New ones
 - They are
- Banks start construction



Steel Market Share has Increased

- Number of applications have increased
- Steel structures are used in more projects



total steel market share is low.

2010 Points of Concern

- Codes
- Design
- Education
- RC competition
- Steel partners are still limited in number
- Other



Codes Need Serious Updating

- All Turkish codes are in serious need of updating and improvement
 - Structural Design Codes
 - Seismic code
 - Fire code
 - A better contemporary
 - In line with EN including



Structural Design Quality has to Improve

- Education of structural engineers for steel
- Structural steel necessity
 - Inc
 - Con
 - Lac
 -
 - Dis



Diamond of Istanbul Towers

Fire Design Support is Necessary

- Support to owners, architects, construction managers
- Fire design support to engineers
- Education of fire consultants
 - Not for selling more protective material



Education is not Fully Satisfactory

- Insufficiencies in the universities...
 - Limited number of academic staff for teaching structural steel

- Curriculum steel c

- Lack of c structure

- TUCSA n



Structural

steel

in this field

Competition is Still Strong

- RC is still cheap...
 - Despite all quality demand commercial concrete qualities are cheap
 - Ready mixed concrete is also subject to unjust competition
- Higher quality but also costly structural steel



Steel Partners are Still Limited in Number

- Steel knowledgeable partners are limited in number
 - Architects
 - Structural Designers
 - Consultants
 - Construction Managers
 - Inspectors
 - Qualified small SWC



Other Points of Concern

- Available land
 - Low width to length ratio of Istanbul land parcels



Change Agents 2010

- Sustainability is a must...
- Architectural Creativity demands more
- Developers Investors are seeking economy
- Economy dictates reason
 - Speed is value
 - More fluctuation on
 - Credits also
- High competition
- Steel aware nation



Conclusions



- Steel's Future is bright! was said by ar
- Promotion is still necessary
 - Domestic steel producers also have to work
 - Innovative promotion...
- Education must Improve
- Work for Codes and Standards is crucial
- Good hard work from TUCSA as an IPO has to continue
- Members have to continue support and activity

Thank you!

- For supporting structural steel sector till today
- For your continuing support
- To all the people who worked for the organization of this event
- Thank you for listening...