

China's Building Boom

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Today's presentation

- Past: Background to Building Boom
- Present: The Building Frenzy
 - Description of the built environment
 - Size, scale, speed of the boom Impact
- Future: China's Building Goals
 - Green Building
 - Where does Wood fit in?

The Construction Boom

- By 2015 the World Bank predicts half of the world's new building construction will take place in China.

Background: China 10 Years Ago

- All land held by Chinese government
- Urban residents employed by State-Owned factories
- All lived in work-unit provided housing, rent-free
- Bicycled to work, possibly bus.
- No bank loans to individuals; no mortgages or car loans.
- Had to have “Passport” (and work-unit approval) to travel within China.

China Today



- Since 1998 housing rapidly privatized.
- Mortgage system put in place. Lending to individuals.
- Over half of economy is private sector driven.

China Today

- Economic boom spurred by building boom
 - Which is spurred by “reckless” lending
 - More than a \$1 bill in FDI each week.
 - Urbanization and suburbanization

Urbanization:

- Rapid urbanization: In 1979 the urbanization rate was 20%.
- Current urbanization rate is about 40%.
- By 2020 urbanization will reach 60%.
- One third of all Chinese will move to a new home in next decade.
- By 2020 China's housing floor area will reach up to 69 billion m².

Construction sector

- 2004 annual construction value reached US\$200 to \$300 billion.
- Construction represents 16% of China's GDP
- Construction expenditures will increase 11.2 percent annually through 2008.
- Non-building construction will grow the fastest

Building Infrastructure: Roads

- Massive 85,000 km highway program goal
- Half the work is done
- Annually China is constructing around 4,000 km of expressways.
- Target to connecting every city with a population of 200,000.
- A four lane motorway will cost \$4 million per km - double if there are tunnels or bridges.

Build Roads: they will come

- 1000 new cars in Beijing each day
- 2002 demand for cars in China soared by 56%. In 2003 this rose to 75%.
- China is already the world's third-largest car market.
- “China is going to become the second-largest market in the world sometime over the next two or three years,”
 - David Thomas, Ford, China.

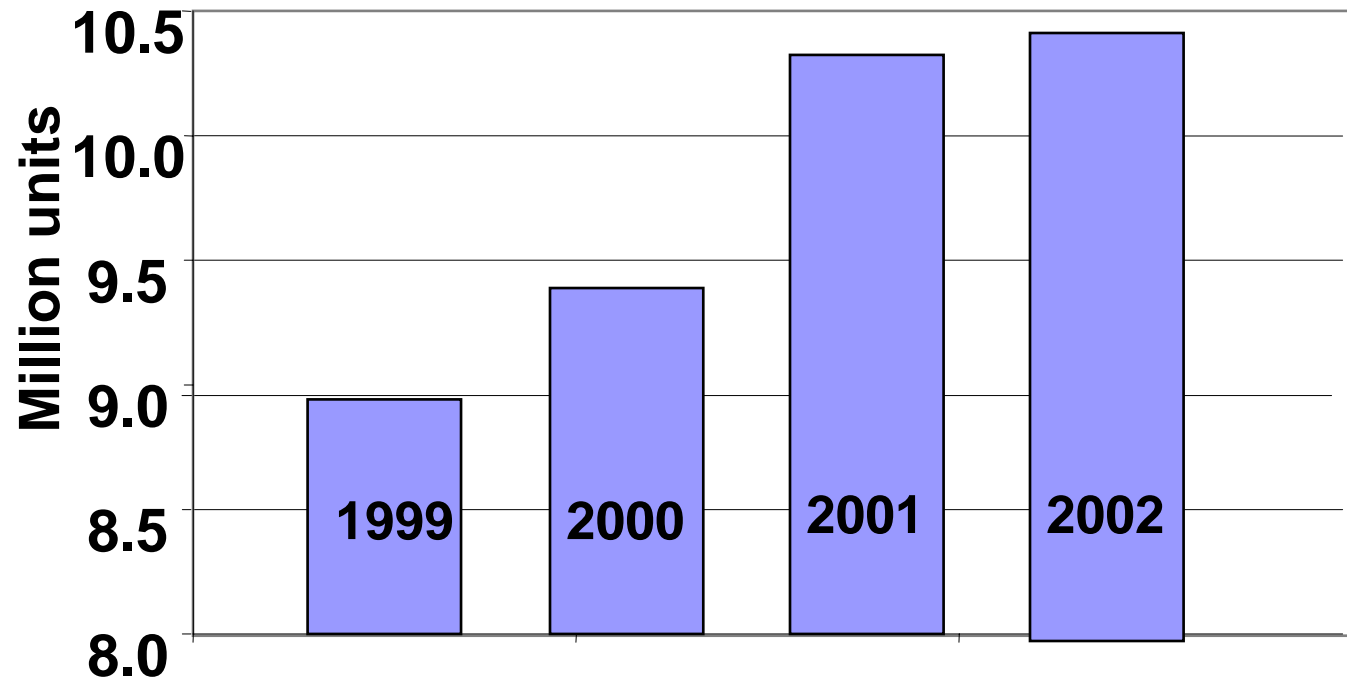
Infrastructure:

- China is adding a new 1,000-megawatt power plant every week.
- Over 100 golf courses currently under construction.
- 60 Velodromes to be built in 5 years.
- The Chinese currently have 48 airports underway.

Housing

- After infrastructure, residential construction is close to non-residential in scale.
- 10 - 12 million annual housing starts.
- China is using 54% of the world's production of concrete and 36% of its supply of steel.

Housing Starts in China



10 - 12 Million Housing Units Per Year



Traditional Post and Beam



Brick House: Before Skim Coat



Brick Masonry Home: After Skim Coat





Brick

Brick: Environmental Impact



Environmental Issues

- **Construction sector consumes 30% of total energy**
- **Results in 35% of total pollution.**
- **Because of their poor quality, the average life cycle of legacy residential buildings in China is less than 30 years.**
- **Energy consumption per unit of heating is 3 times higher than that of developed countries.**

Energy And The Environment

- **China: second largest energy consumer (after the US).**
- **China is the Saudi Arabia of coal. Largest producer and consumer of coal in the world.**
- **Coal makes up the bulk of China's energy consumption (65% in 2002)**
- **China's coal consumption will increase.**

Oil Consumption rising

- *China surpassed Japan as the world's second-largest petroleum consumer in 2003.*
- China is the source of around 40% of world oil demand growth over the past four years.
- Chinese oil demand is a key factor in world oil markets.
- Chinese electricity consumption will grow an average of 5% per year through 2025.

Environmental Degradation

- Desertification
- Seven of the ten most polluted cities in the world are in China. (World Bank)
- Respiratory and heart diseases related to air pollution are the leading cause of death in China.

Environmental Damage

- All the nation's rivers are considered polluted to some degree, and half of the population lacks access to clean water.
- Acid rain falls on 30% of the country.
- Various studies estimate pollution costs the Chinese economy 7-10% of GDP each year.
 - Source: US State Department July, 2005

Green Building Policies

- Energy efficiency.
- MOC is drafting voluntary green standards with Tsinghua University.
- Tsinghua has developed green building standards for the Olympics
- Currently, energy-saving buildings comprise less than 1% of the country's total construction by square meter.

Green Policies = Energy

- MOC: by 2010, all Chinese cities will reduce their buildings' energy use by 50 percent;
- by 2020, reduction will be 65 percent.
- Furthermore, by 2010, goal is to have 25 percent of existing public buildings retrofitted to be greener;
- Over 80 million square meters of building space will be powered using solar and other renewable energies.

USGBC in China



Competing Gov't Objectives

- Yes, energy efficiency.
- But self-sufficiency in wood is already deemed too low.
- Don't want a foreign system (WFC) to further drive demand of wood.
- Jobs.

Must Drive Demand

A photograph of a traditional Chinese building's roof with ornate sculptures, set against a backdrop of misty mountains. The roof features several dark, carved figures along its edge. The background shows a range of blue mountains under a hazy sky.

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