The construction of Beijing 2008 Olympic venues and the application of IT

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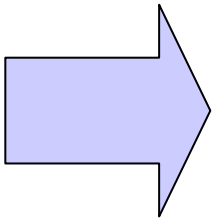
Agenda

- **Beijing Olympic Venue Projects**
- **Utilization of information technology**
- **Monitoring system of construction**
- **Collaborative system for construction**
- **4D construction management system**
- **Summary**

Beijing 2008 Olympic Venue Projects



- The 29th Olympic Games
- Beijing awarded on July 23, 2001
- Aug. 8-24, 2008

Competition Venues - The Official Website of the Beijing 2008 Olympic Games - M...

http://en.beijing2008.cn/cptvenues/venues/

Sports & Venues Competition Venues | Olympic Competitions | Schedule

301 days to go

Home > Sports & Venues > Competition Venues

Site Search GO Register/Logi

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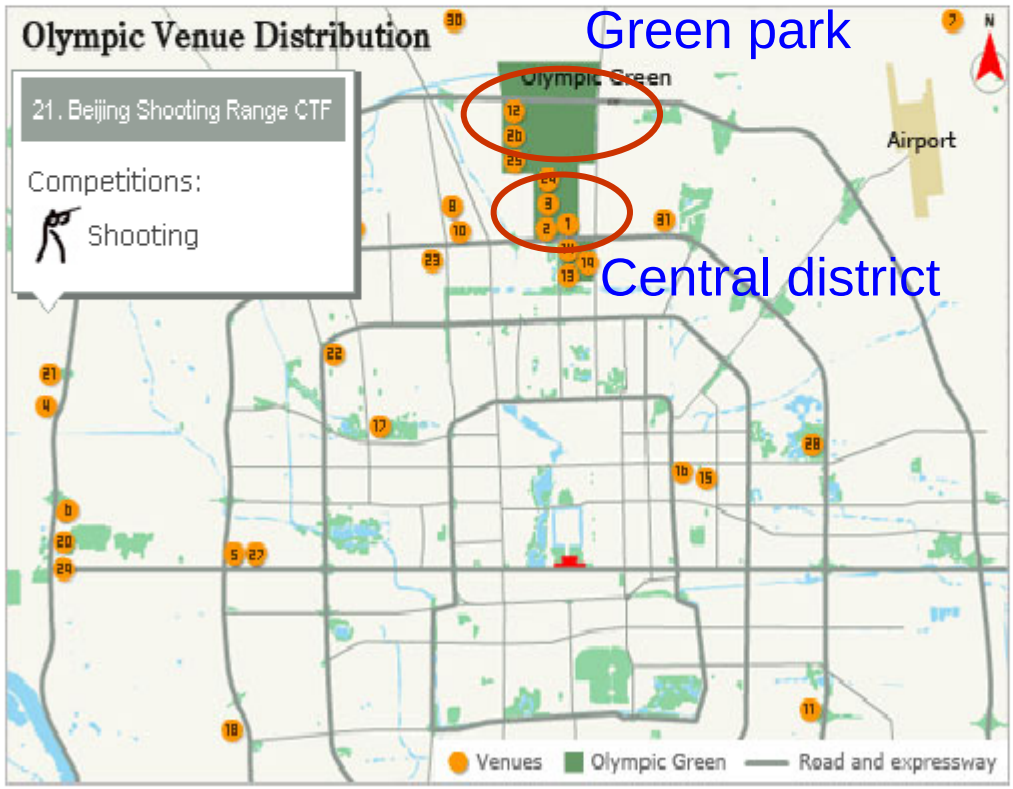
- News
- Sports & Venues
- Spectators
- Media Operations
- Volunteers
- Olympic Spirit
- Olympic Education
- Olympic Culture
- Torch Relay
- Fun Page
- Good Luck Beijing
- BOCOG

Beijing Paralympic Games

Olympic Venue Distribution



New Venues in Beijing

Photo Gallery | Olympic Venues | Hall of Fame

Metal scale models of the 'Bird's Nest' sold out in an hour

One-year Countdown to the Beijing 2008 Paralympic Games

2007 International Goalball Tournament

Public Transport Week & Car-free Day

More>>

Ticketing

- Tickets Info
- Reserve Tickets

Projects of venue construction

- Related investment： 280 (Appr. 40 BUSD)
  - Subway・Expressway・Airport 90
  - City beautification 45
  - Digital city 30
  - Water supply・Power plant 15
  - Measures on environment 71
  - Construction of sports venues 17
  - Operation of the Games 11

(unit: BRMB 100 BRMB＝14.61 BUSD Oct.15,2008)

- Sports venues
  - Compitition venues　37
    Where
    venues in Beijing：　32
    - Newly constructed：　13
    - Temporary：　7
    - Reformed：　12
  - Trainning venues：　59
  - Paralympic venues：　18

- Olympic Green
  - spreads over an area of 1135 hectare

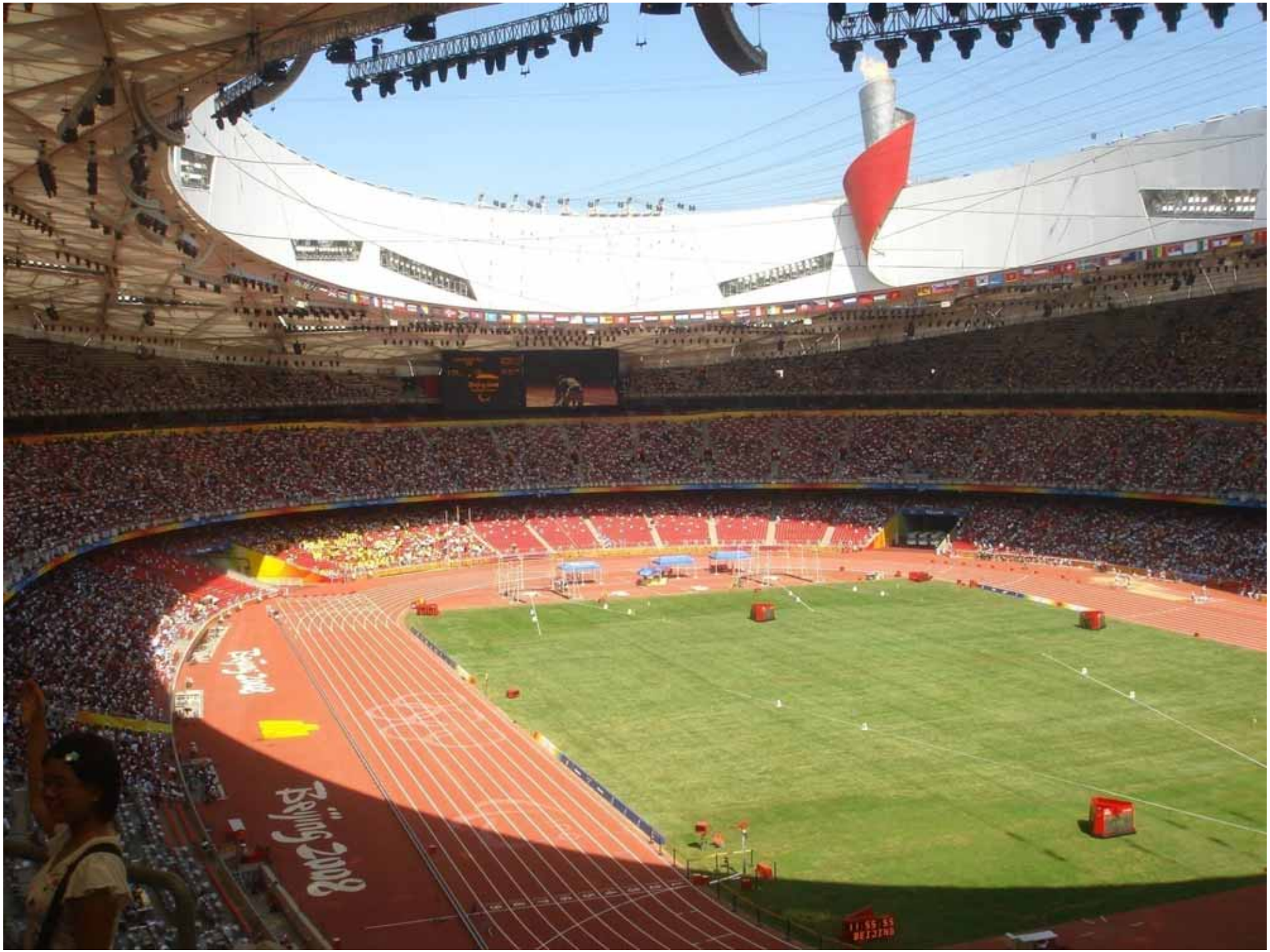
    Where, Green park 680 hectare

    Central district 291 hectare
  - Central district

    to construct

    Sports, cultural, conference, commercial facilities and Olympic Village

- National Stadium
  - Main stadium: opening and closing ceremonies, soccer
  - Nickname “Bird’s Nest”
  - Total land surface：258,000 sq m
  - Seats: 91,000
  - Steel usage: 50000 ton
  - Construction cost： 3.4 BRMB


Beijing 2008

- National Aquatics Center
  - Competitions: Swimming, Diving, Synchronized Swimming
  - Nickname “Water Cube”
  - Total land surface: 65,000 sq m
  - Seats: 6,000 permanent and 11,000 temporary;
  - Construction cost： 0.83 BRMB


腾讯
BLOG:C

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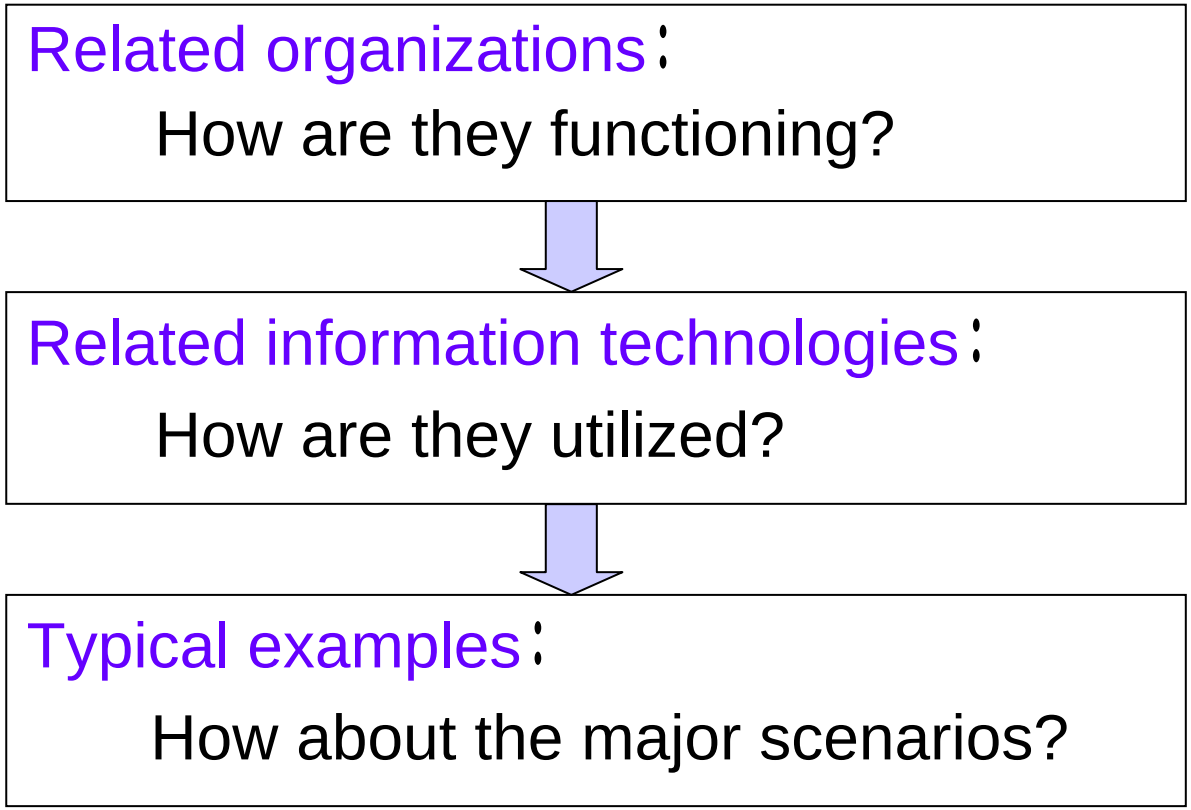
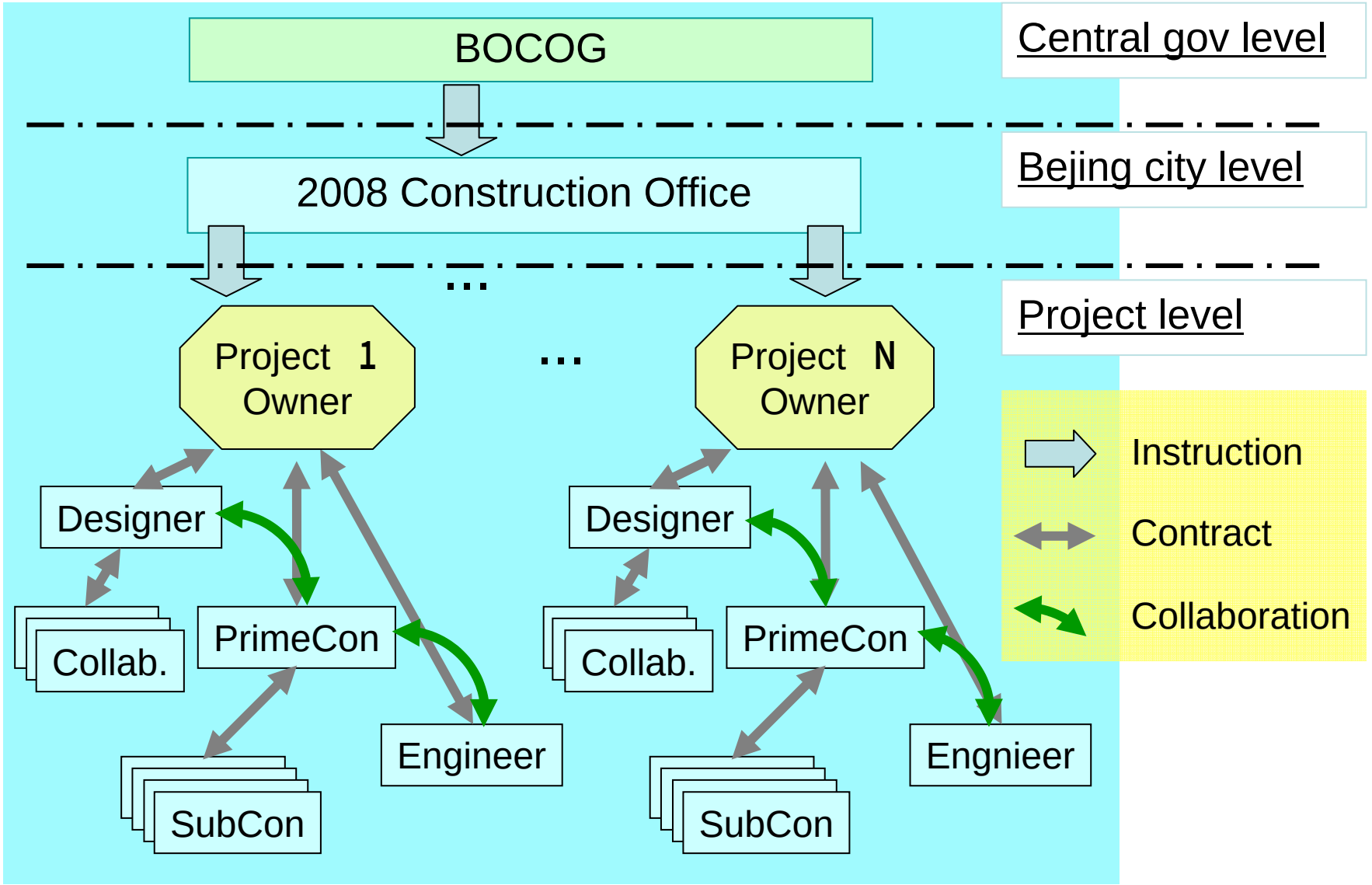
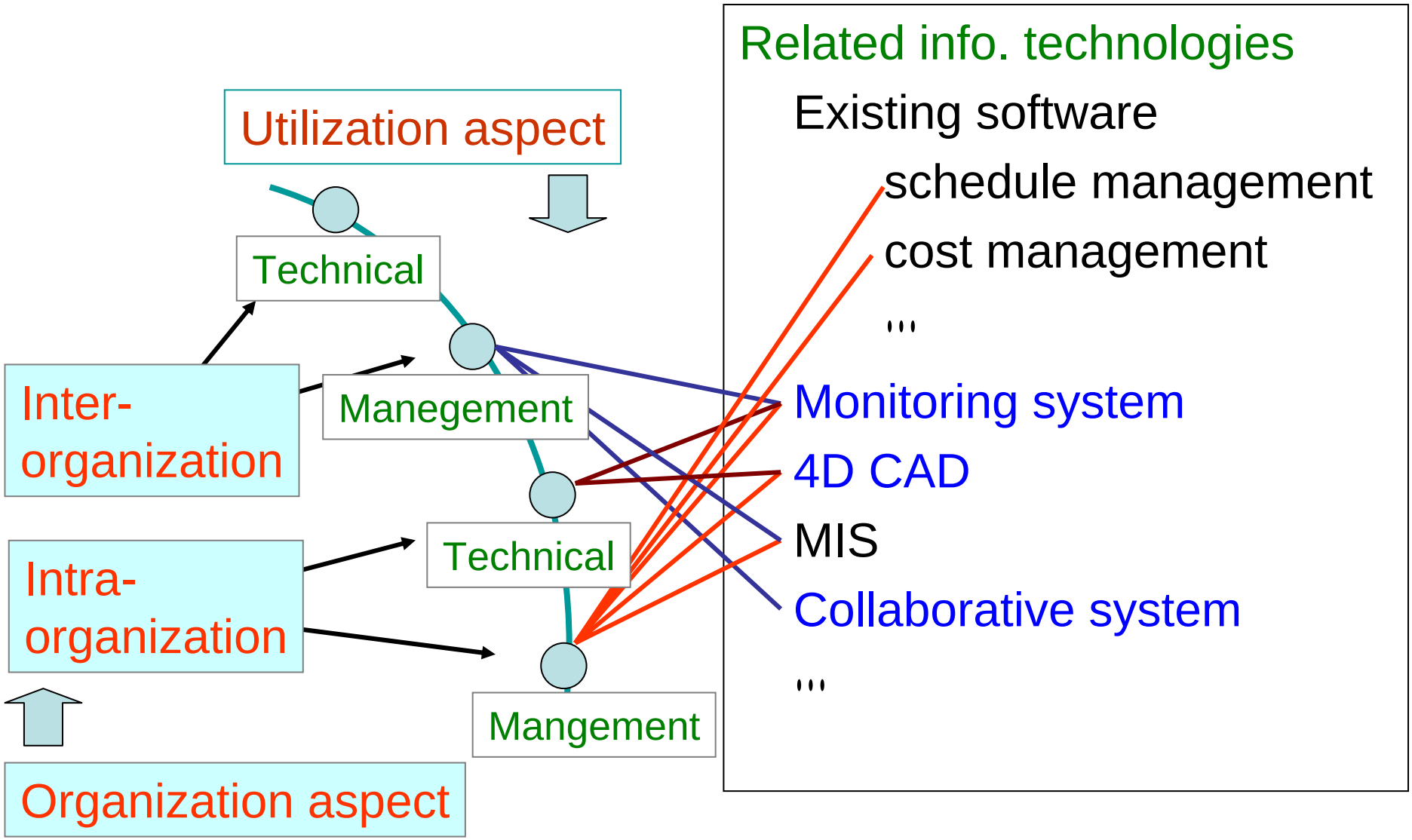
Utilization of information technology





Related organizations



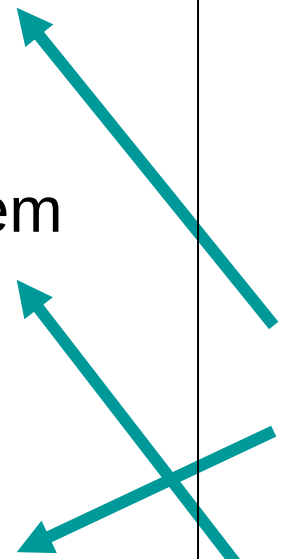
Aspects of utilizing information technology

Typical examples

1. Monitoring system of construction

2. Collaborative system for construction

3. 4D construction management system



Major information technologies

Existing software

schedule management

cost management

'''

Monitoring system

4D CAD

MIS

Collaborative system

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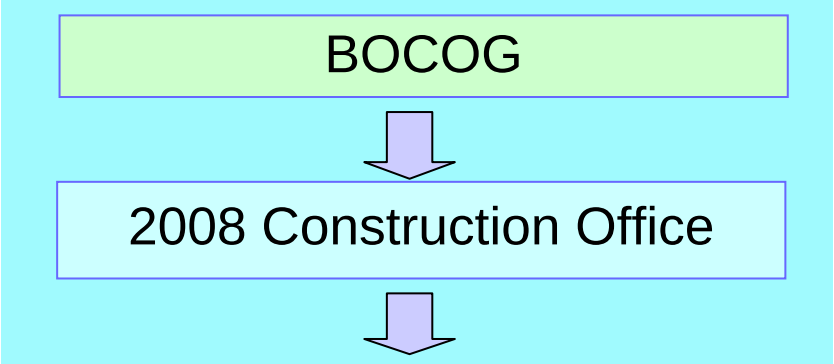
Monitoring system of construction

- Users



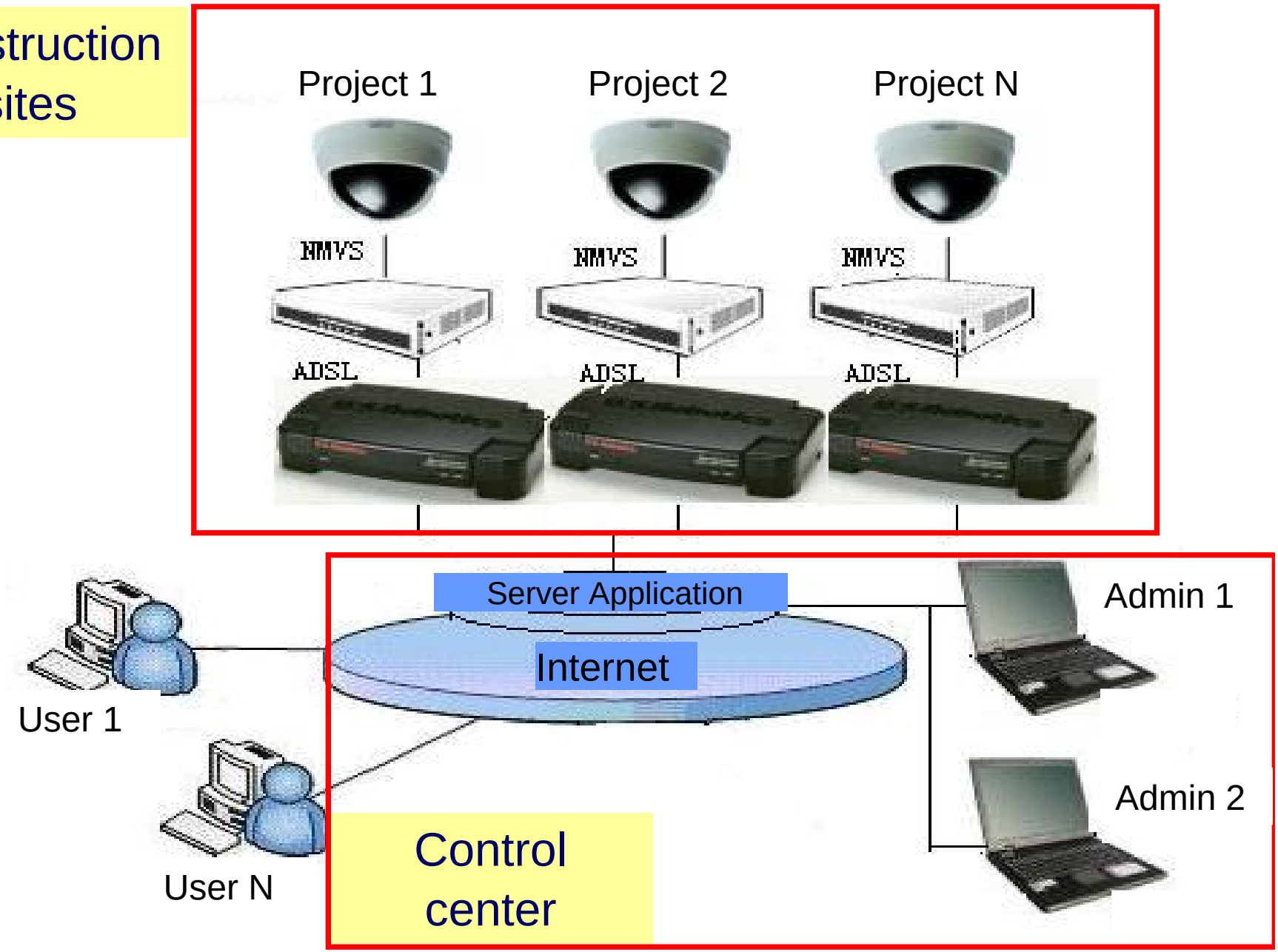
- Purposes

  to grasp the construction sites from office

- Effects

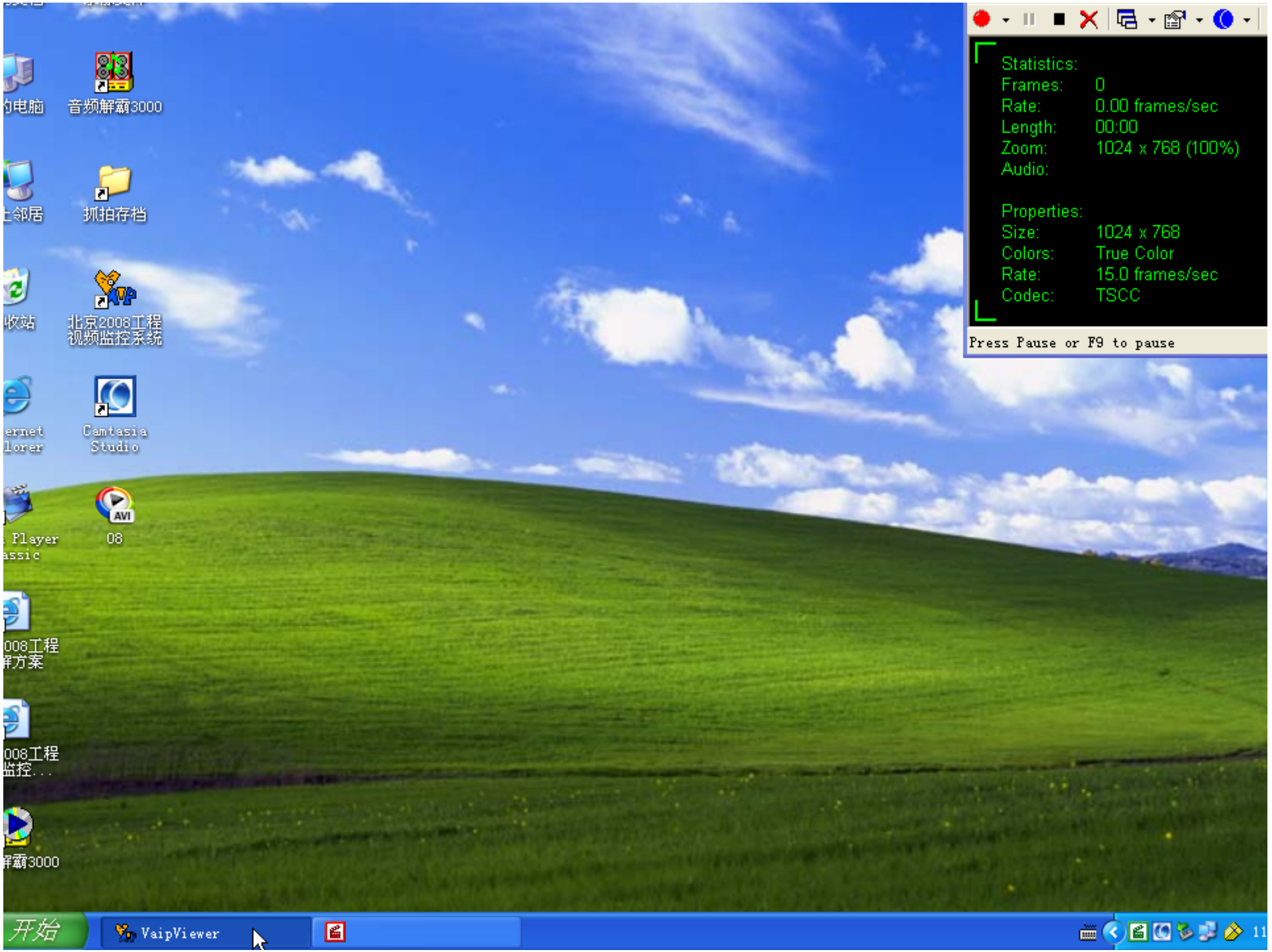
  grasped the construction sites in real time without going out of office

By courtesy of Mr. Wang Dayong



Architecture of the system

By courtesy of Prof. Chen Dailin


音频解霸3000
抓拍存档
北京2008工程
视频监控系统
Camtasia
Studio
08
Statistics:
Frames: 0
Rate: 0.00 frames/sec
Length: 00:00
Zoom: 1024 x 768 (100%)
Audio:
Properties:
Size: 1024 x 768
Colors: True Color
Rate: 15.0 frames/sec
Codec: TSCC
Press Pause or F9 to pause
开始
VaipViewer

By courtesy of Prof. Chen Dailin

By courtesy of Prof. Chen Dailin

By courtesy of Prof. Chen Dailin

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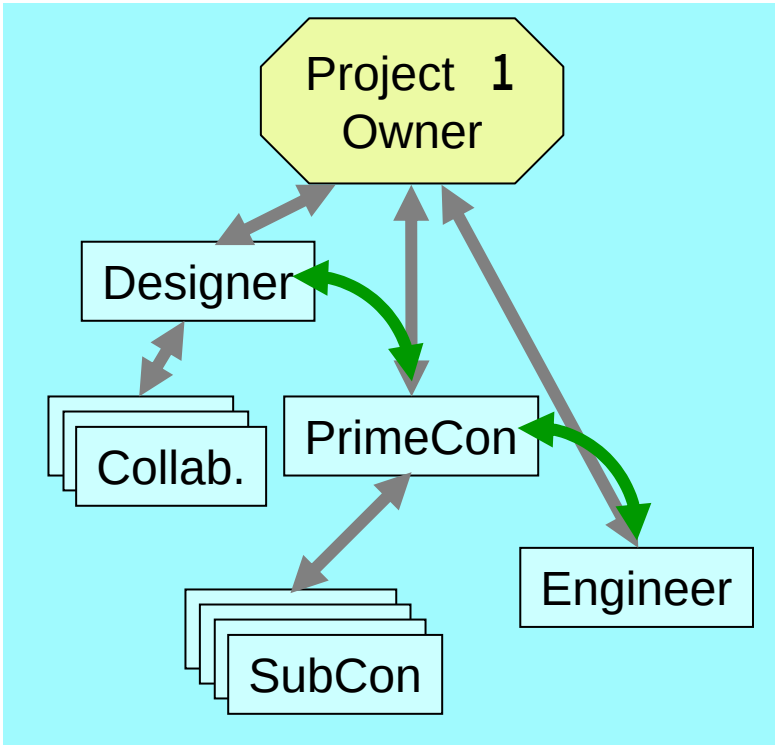
Collaborative system for construction

- Users



- Purposes

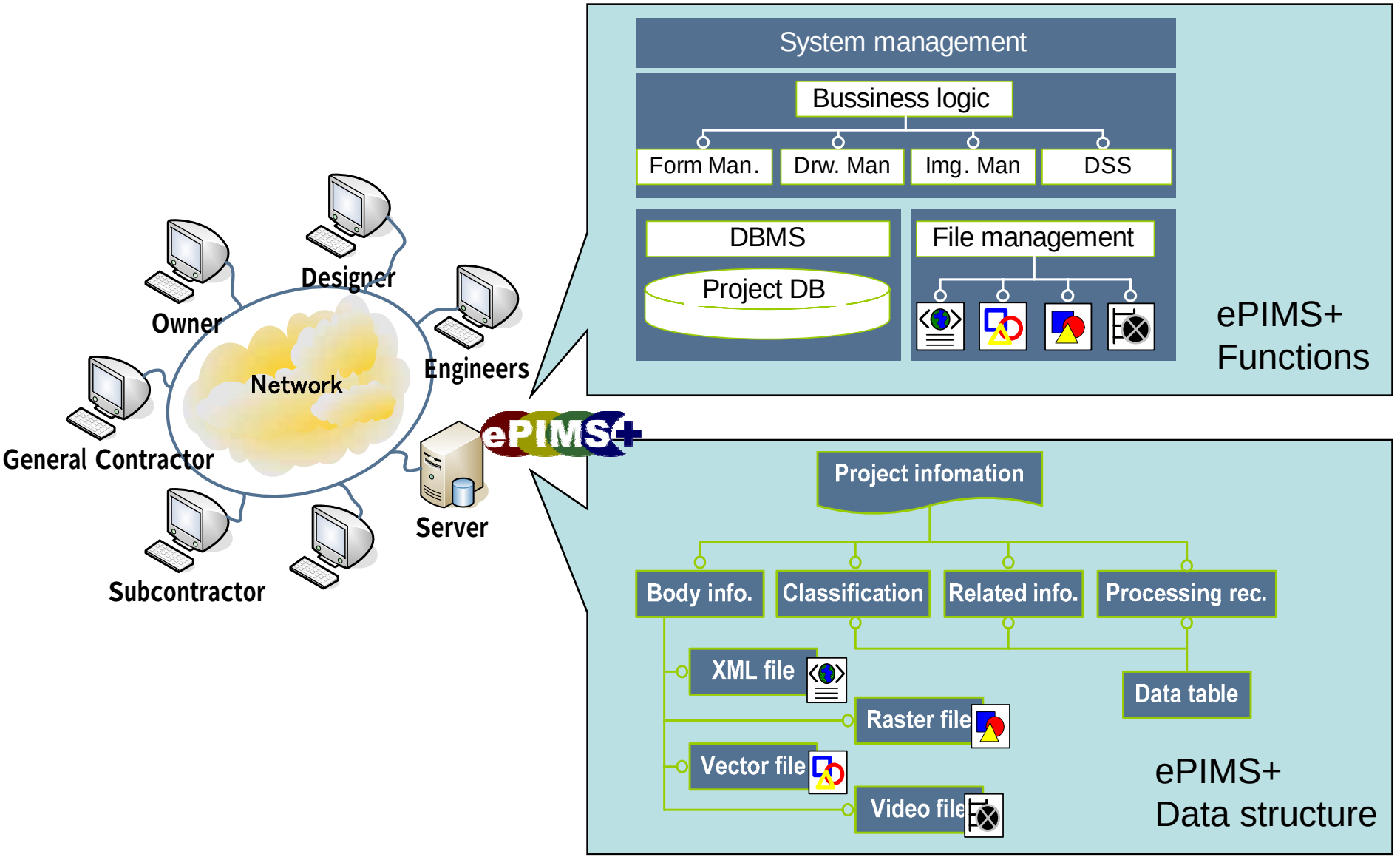
  to support collaboration among multi-party in construction project

- Effects

  Cost down

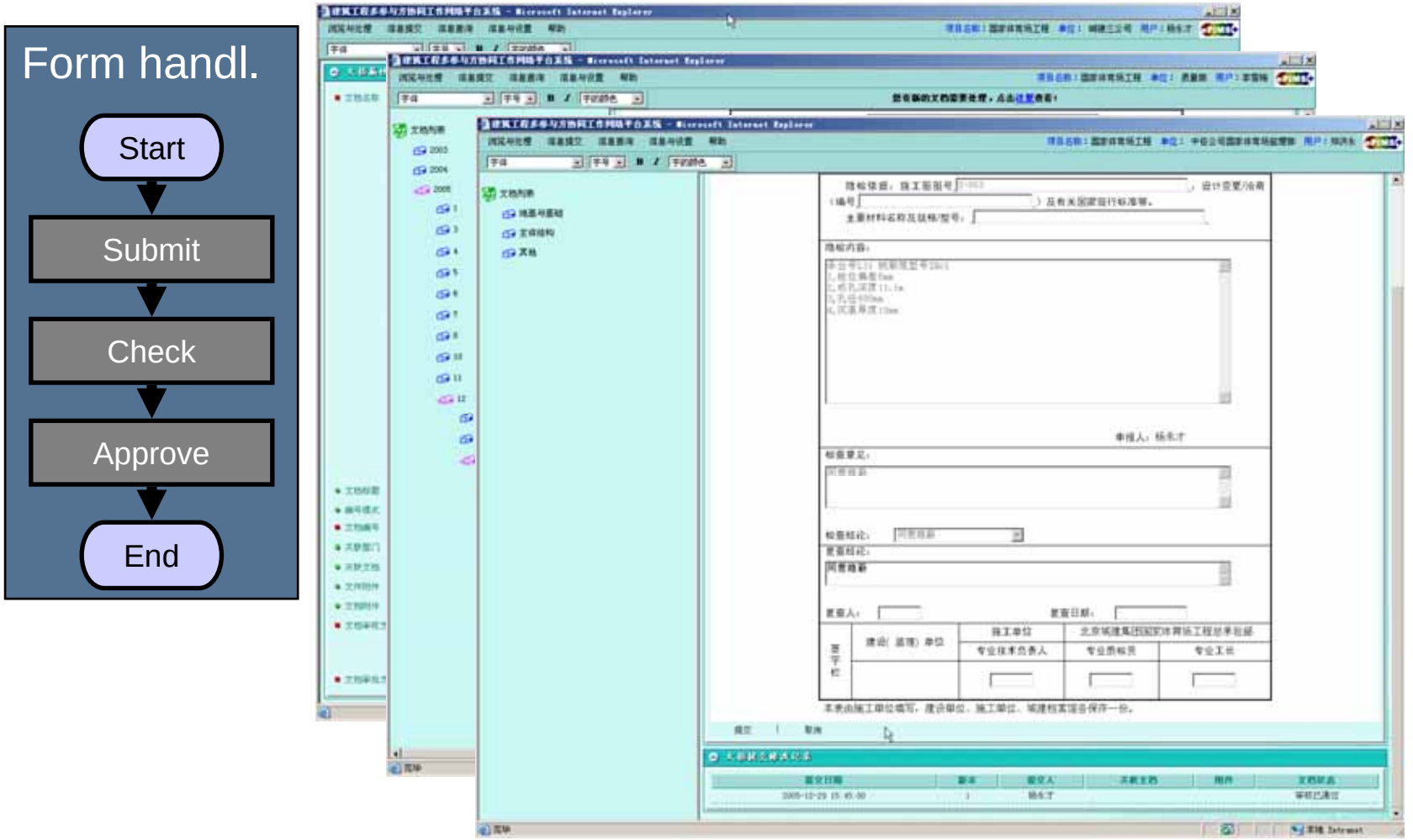
  Better control capability of prime contractor

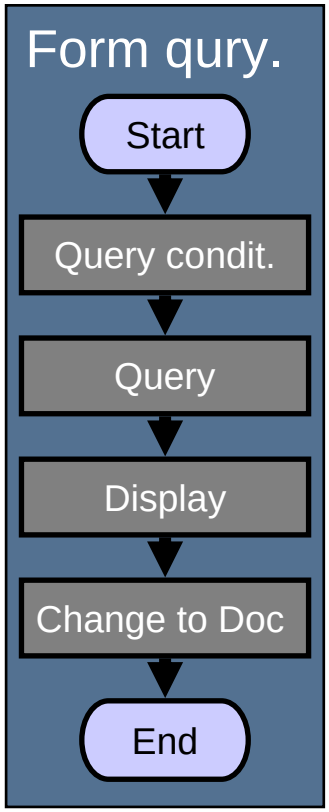
  Better utilization of information resources



Concepts of ePIMS+

Major scenarios

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Start
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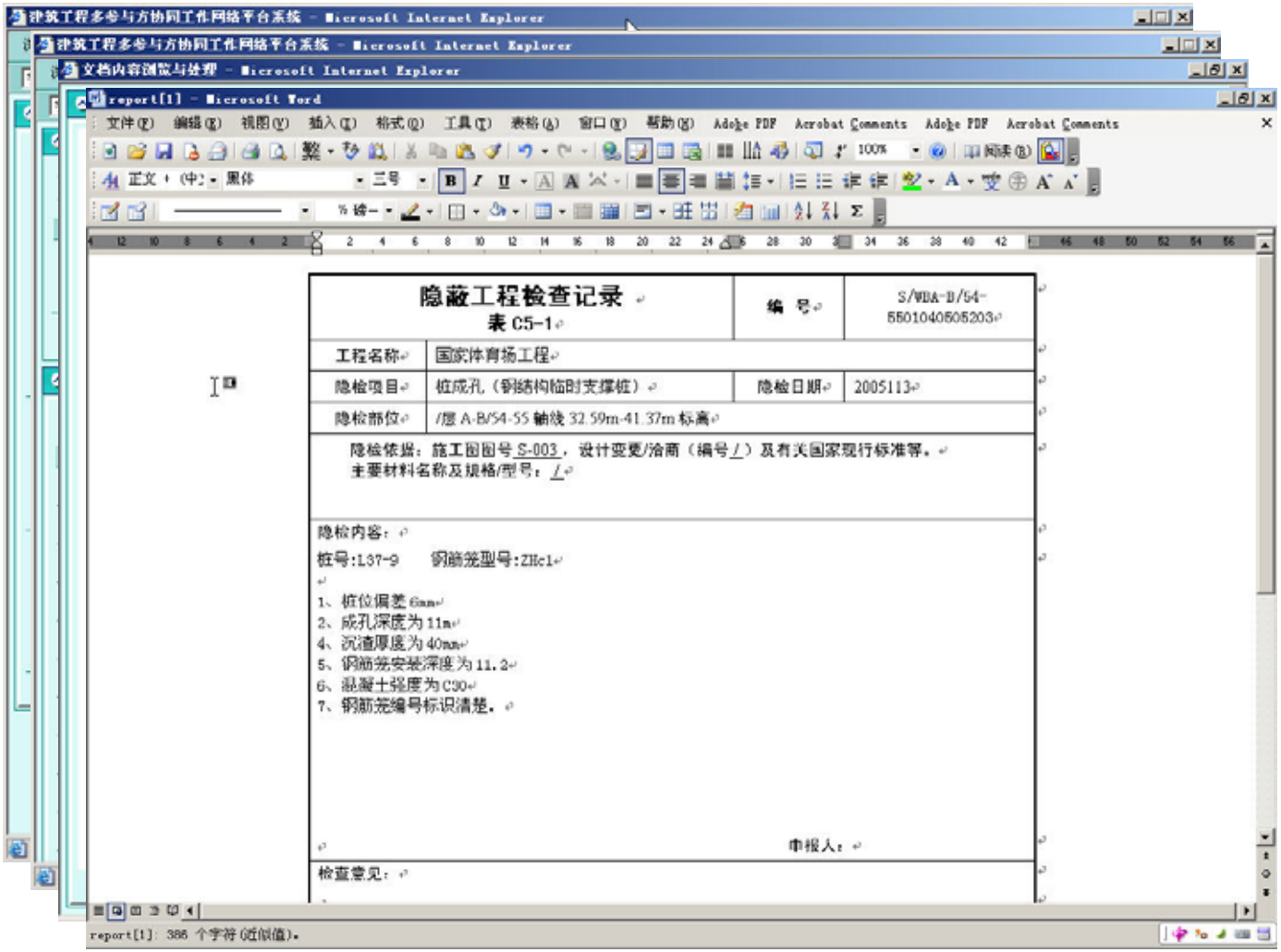
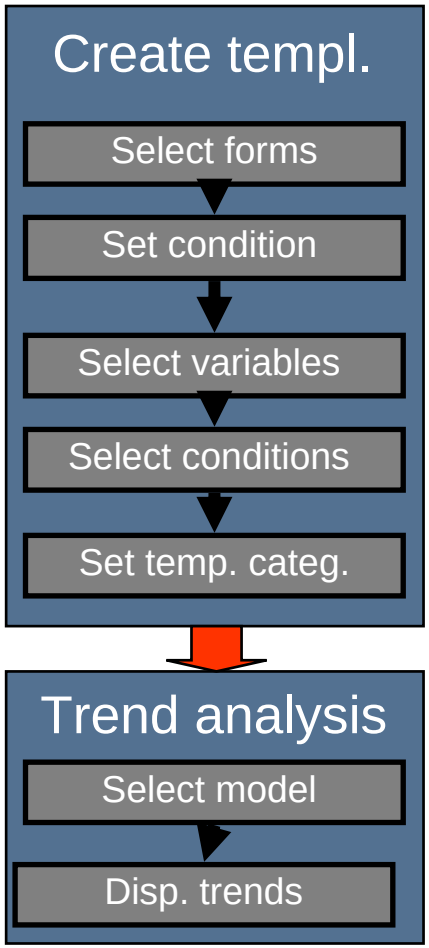
Query
Display
Change to Doc
End


建筑工程多参与方协同工作网络平台系统 - Microsoft Internet Explorer
文档内容浏览与处理 - Microsoft Internet Explorer
report[1] - Microsoft Word
隐蔽工程检查记录
表 C5-1
编 号
S/WBA-B/54-5501040505203
工程名称 国家体育场工程
隐检项目 桩成孔（钢结构临时支撑桩）
隐检日期 2005113
隐检部位 /层 A-B/54-55 轴线 32.59m-41.37m 标高
隐检依据：施工图图号 S-003，设计变更/洽商（编号/）及有关国家现行标准等。
主要材料名称及规格/型号：/
隐检内容：
桩号:137-9 钢筋笼型号:ZHc1
1、桩位偏差 6mm
2、成孔深度为 11m
4、沉渣厚度为 40mm
5、钢筋笼安装深度为 11.2
6、混凝土强度为 C30
7、钢筋笼编号标识清楚。
申报人：
检查意见：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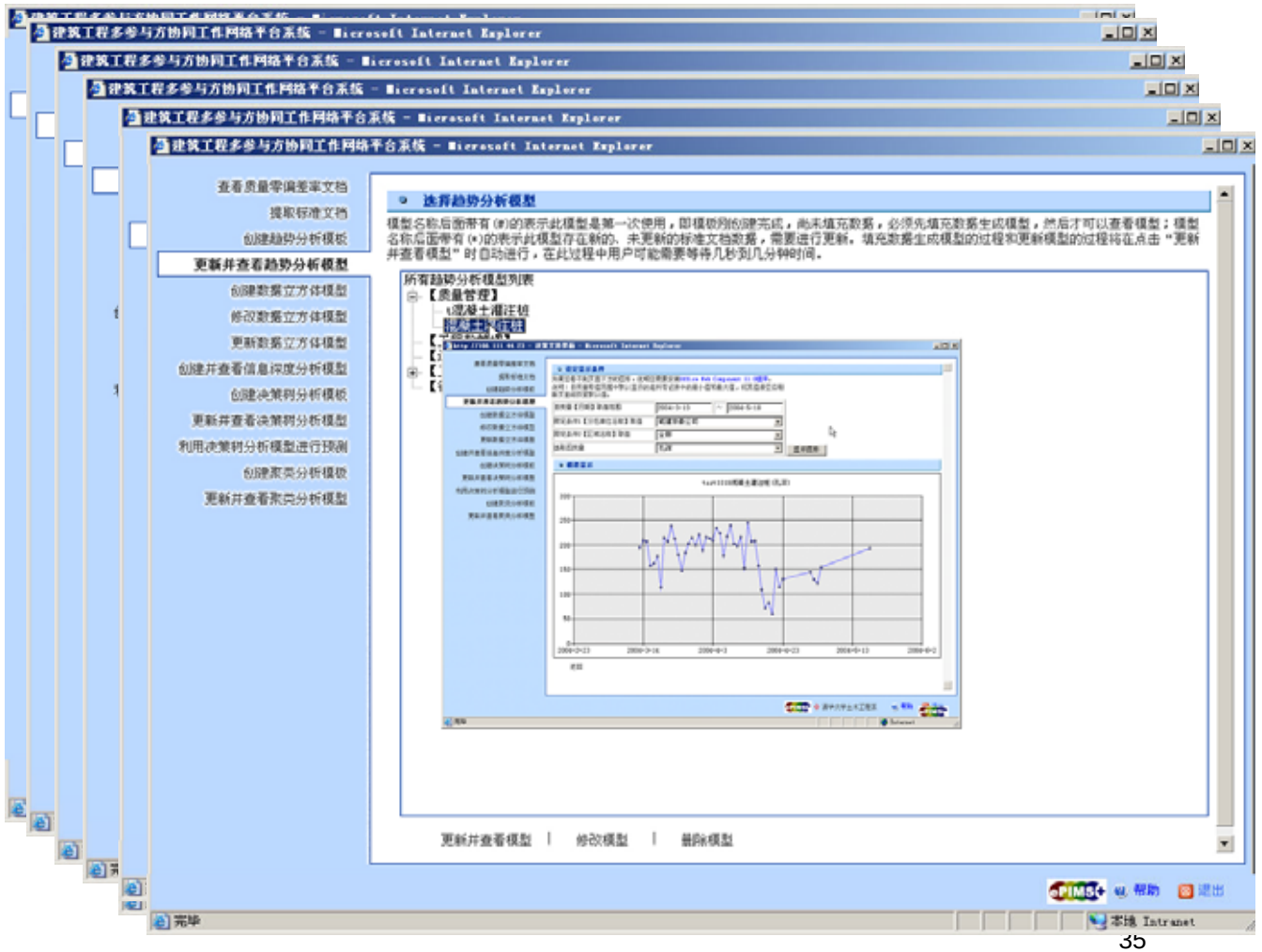
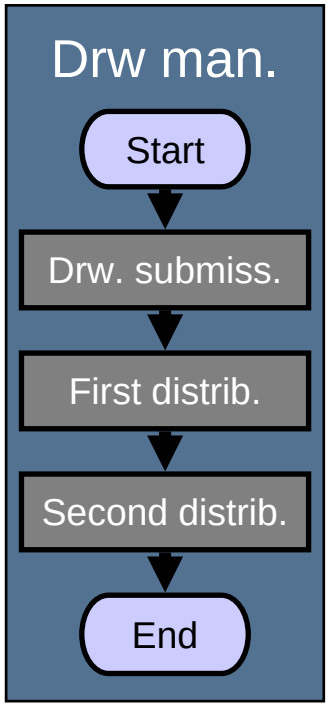
Select forms
Set condition
Select variables
Select conditions
Set temp. categ.
Trend analysis
Select model
Disp. trends


建筑工程多参与方协同工作网络平台系统 - Microsoft Internet Explorer
查看质量零偏差率文档
提取标准文档
创建趋势分析模板
更新并查看趋势分析模型
创建数据立方体模型
修改数据立方体模型
更新数据立方体模型
创建并查看信息深度分析模型
创建决策树分析模板
更新并查看决策树分析模型
利用决策树分析模型进行预测
创建聚类分析模板
更新并查看聚类分析模型
选择趋势分析模型
所有趋势分析模型列表
【质量管理】
更新并查看模型
修改模型
删除模型
帮助
退出
完毕
本地 Intranet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Second distrib.
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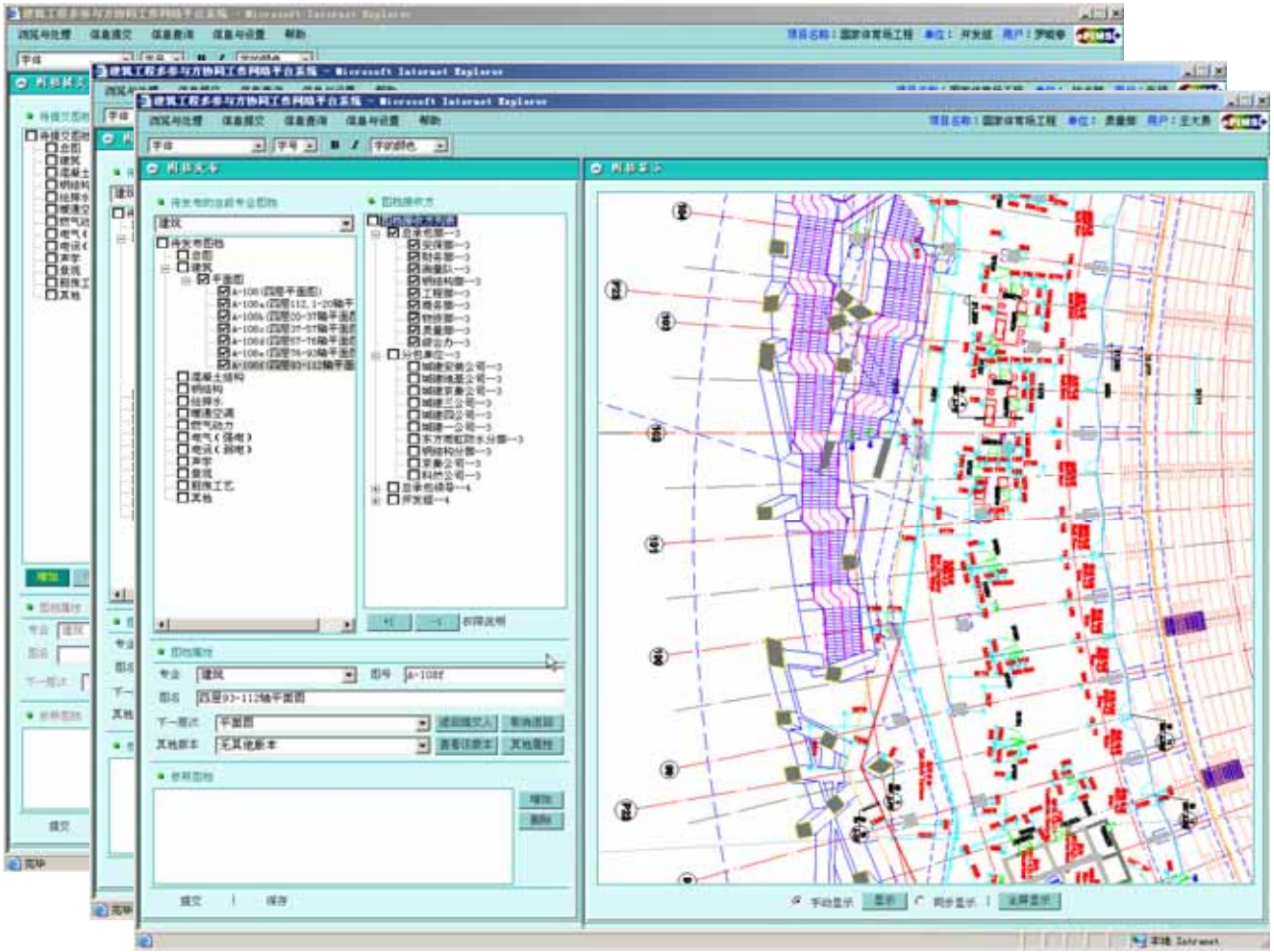

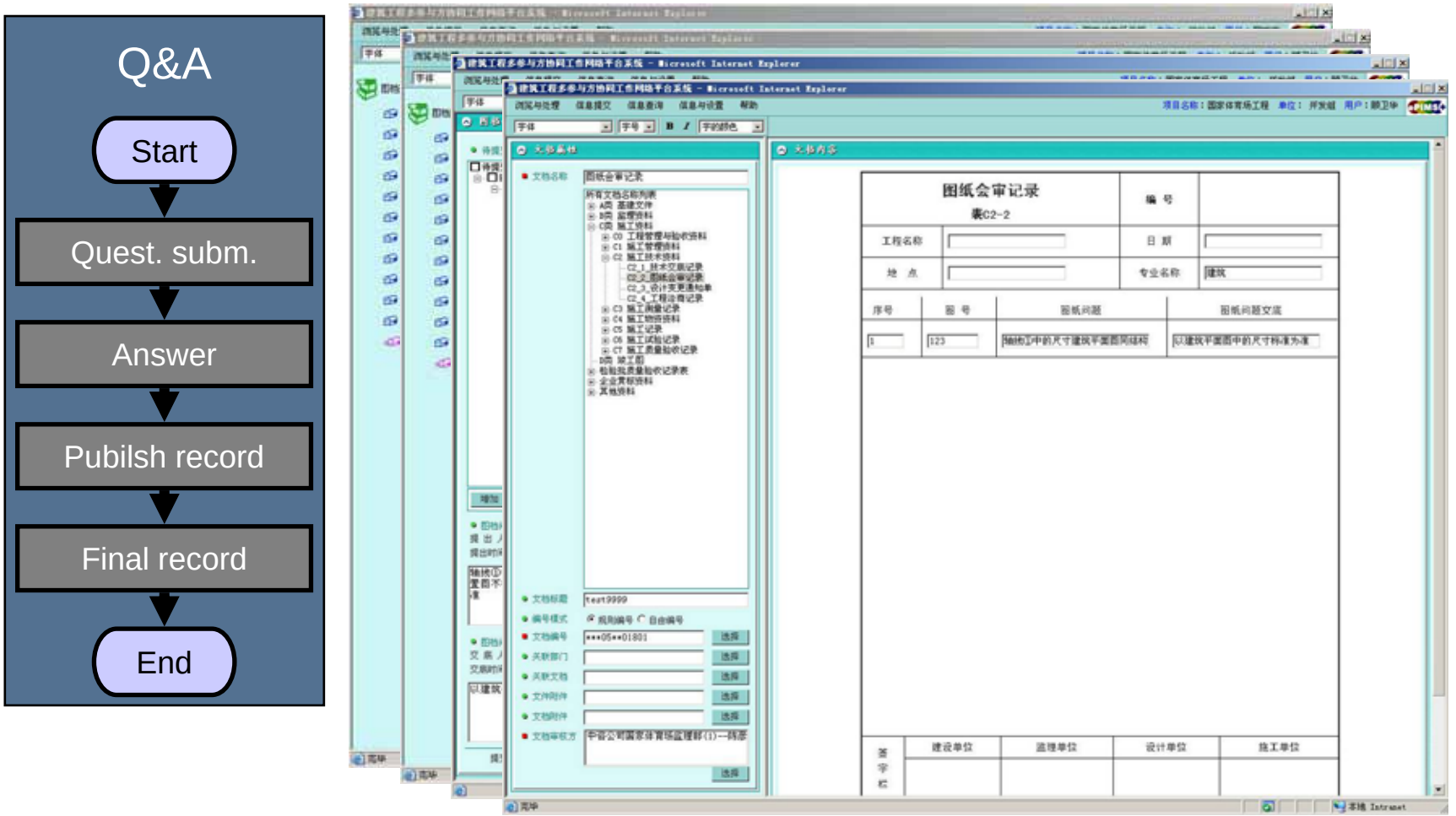
Q&A
Start
Quest. subm.
Answer
Pubilsh record
Final record
End
图纸会审记录
表C2-2

Application of ePIMS+

- National Stadium
  - Main stadium of Beijing 2008 Olympic Games
  - Nickname “Bird’s Nest”
  - 90000 seats
- Prime contractor and subcontractors
  - About 100 subcontractors

Application of ePIMS+

- National Stadium
- Prime contractor and subcontractors
  - About 100 subcontractors

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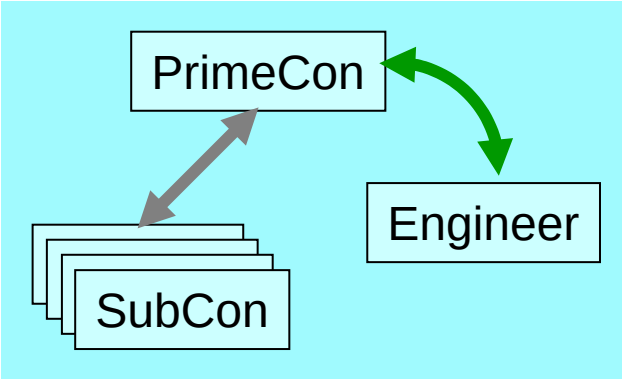
4D construction management system

- Users

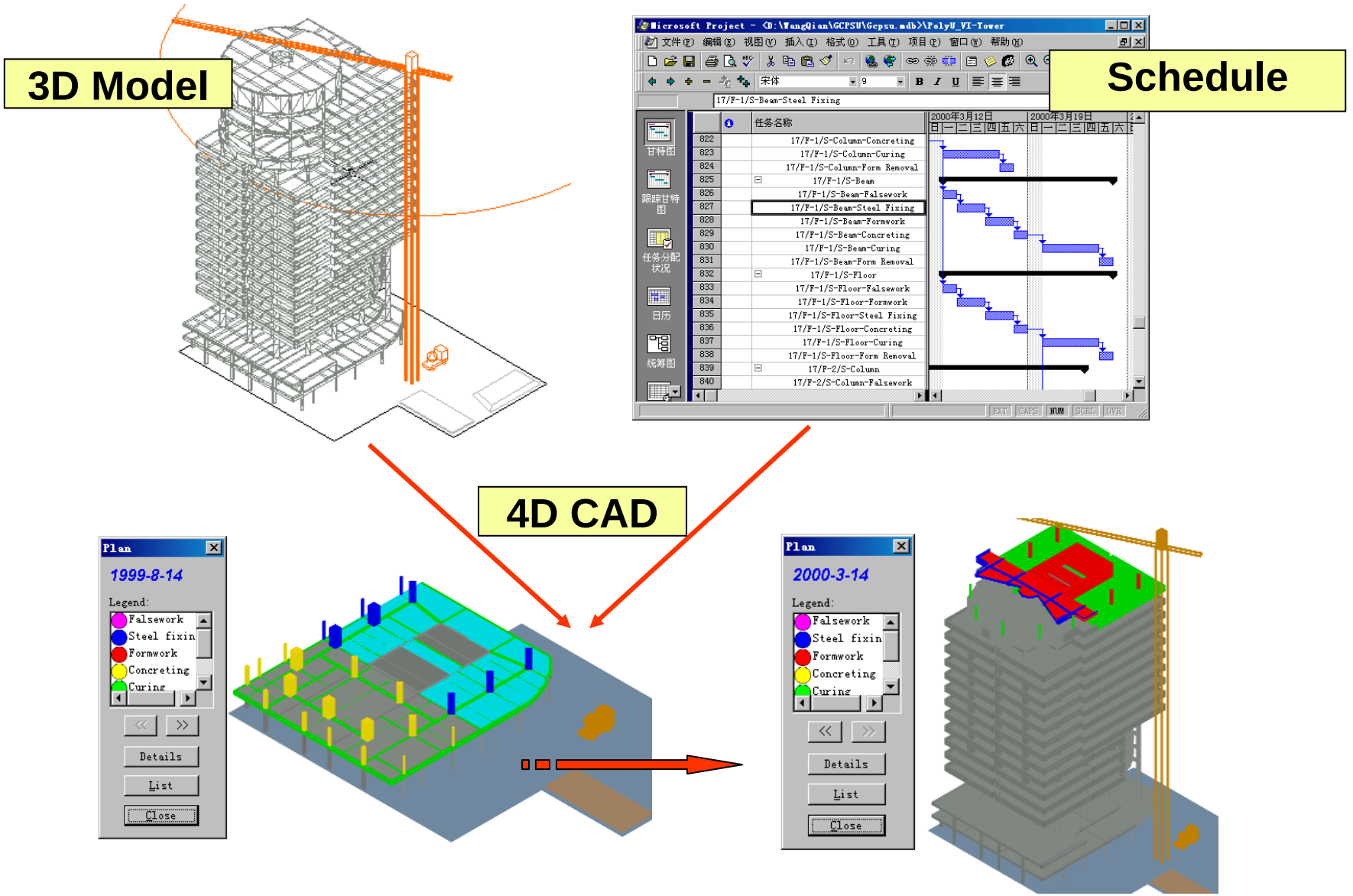


- Purposes

  to provide a platform for the collaboration among the related parties in the National Stadium project

- Effects

  control the processes visually and accurately
  utilize the resources in an optimum way

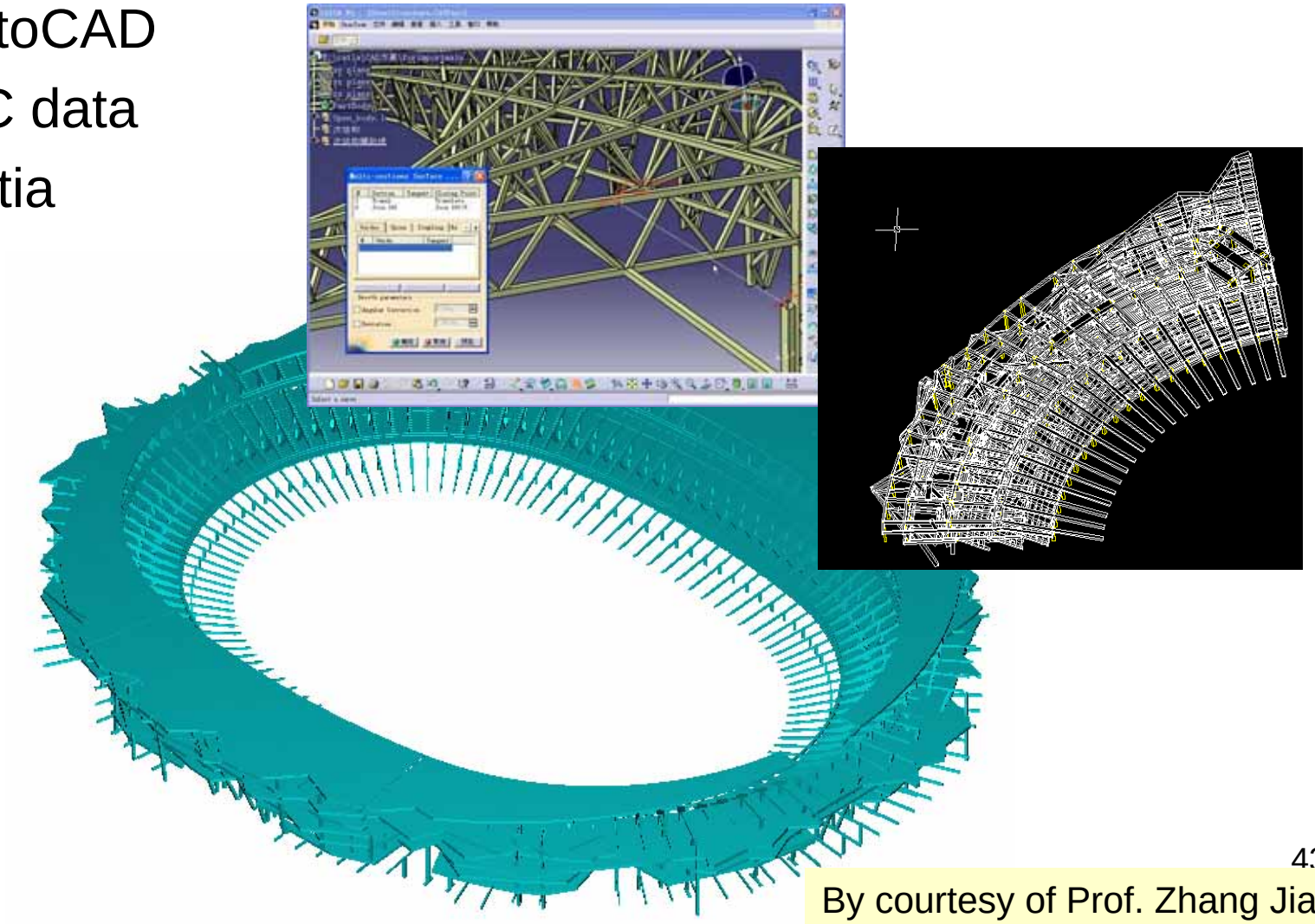


Concept of 4D construction management system

By courtesy of Prof. Zhang Jianping

Introduce data from 3D model

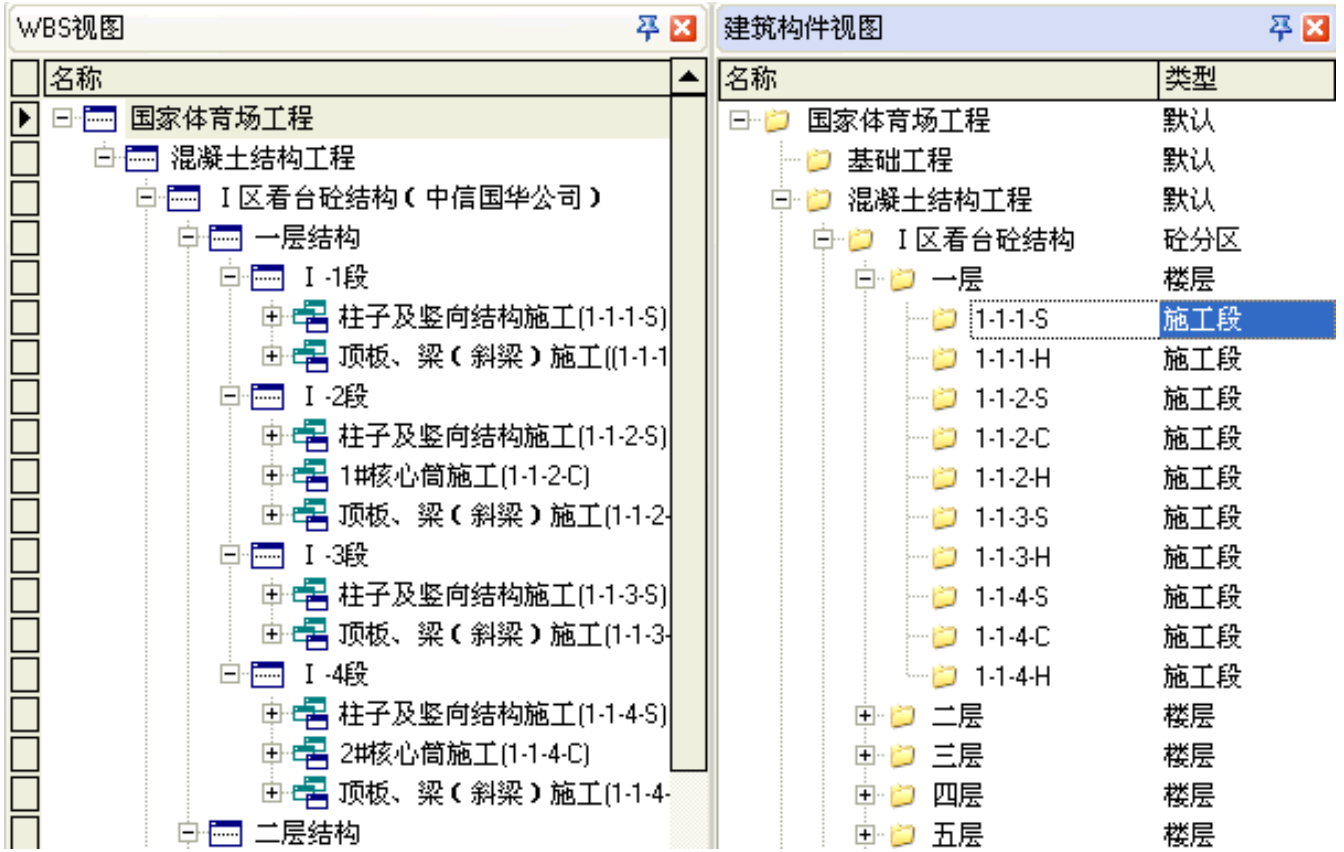
- AutoCAD
- IFC data
- Catia



By courtesy of Prof. Zhang Jianping

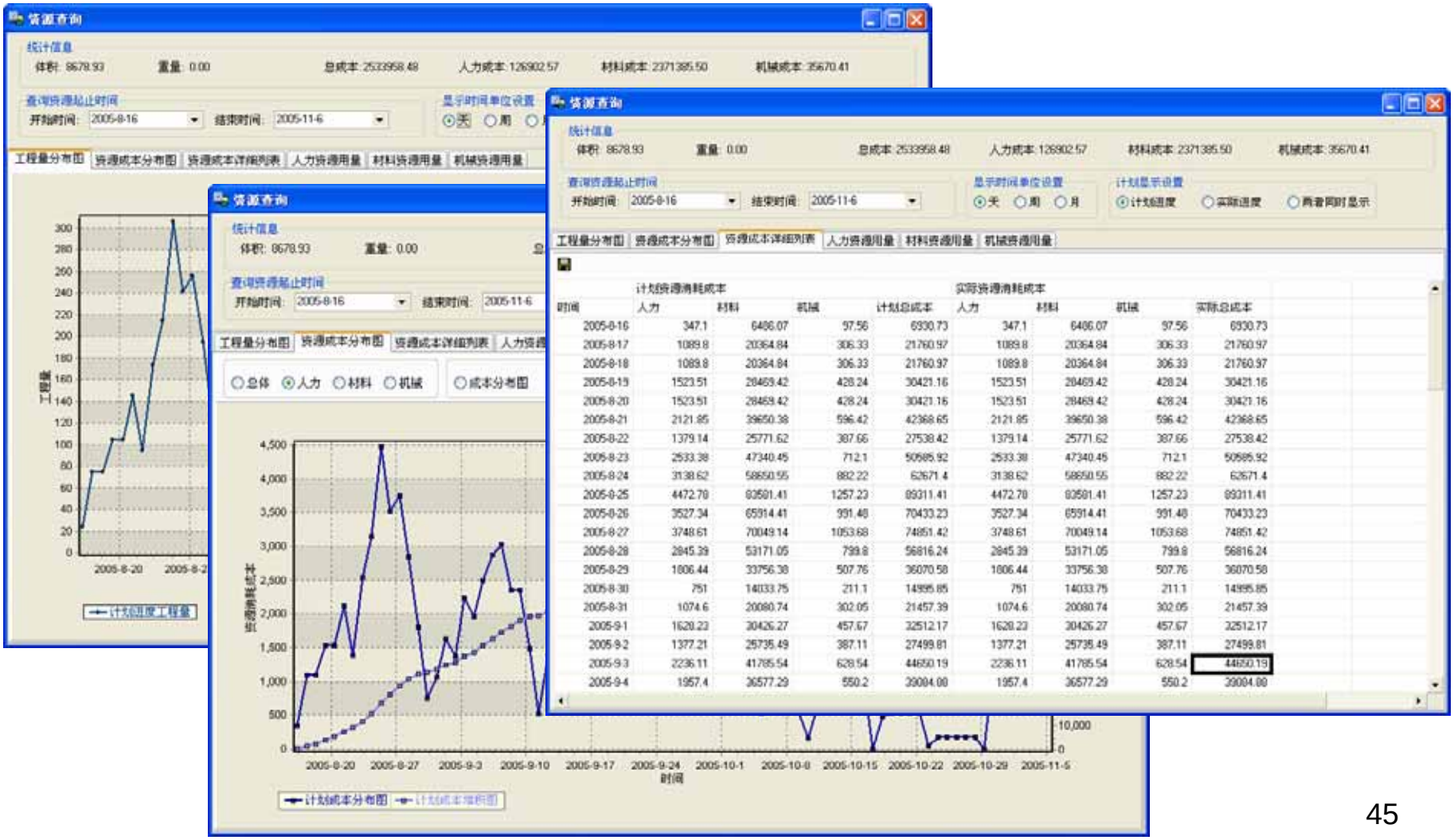
Generation of 4D model

- Manually
- Automatically

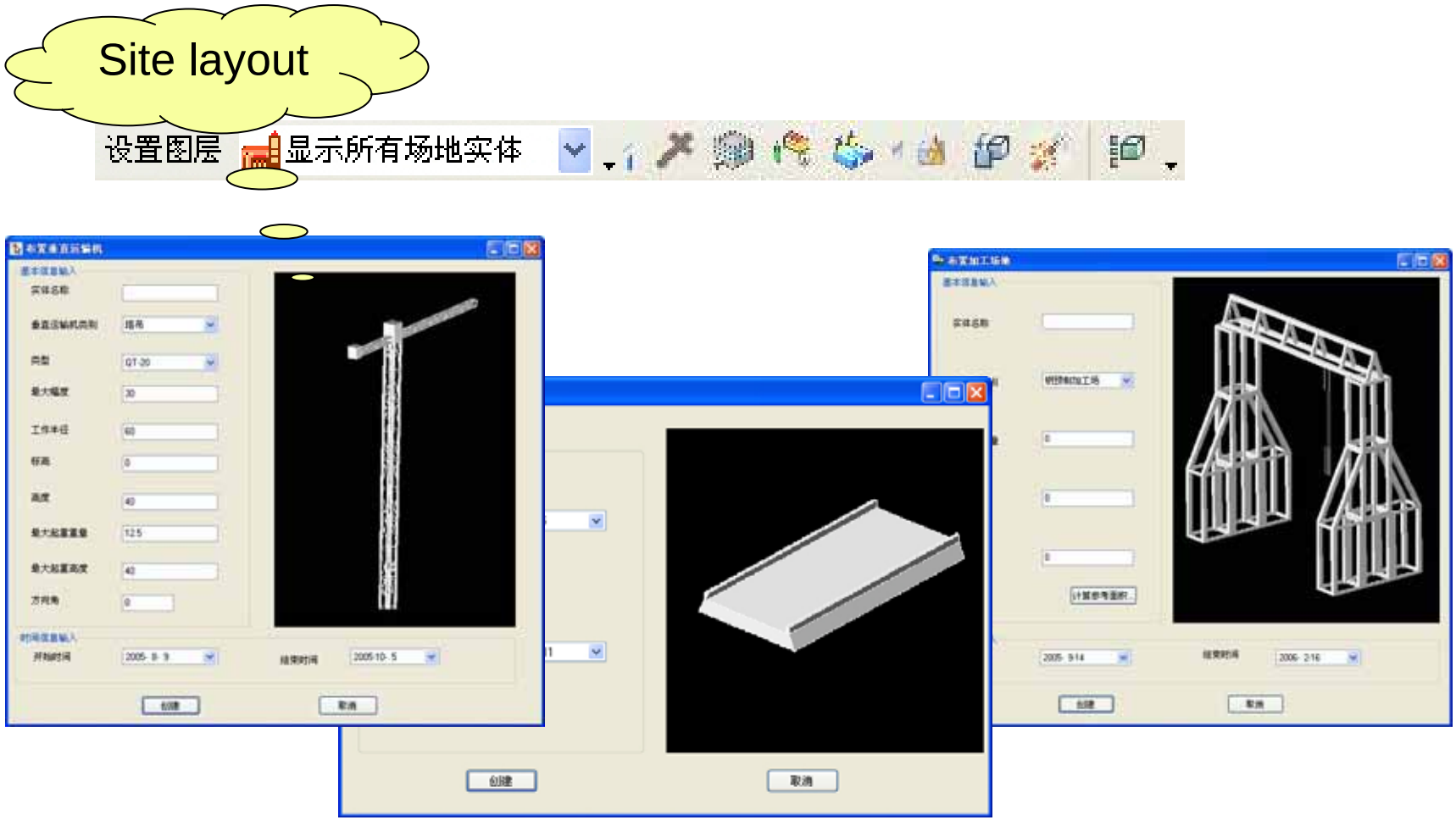


By courtesy of Prof. Zhang Jianping

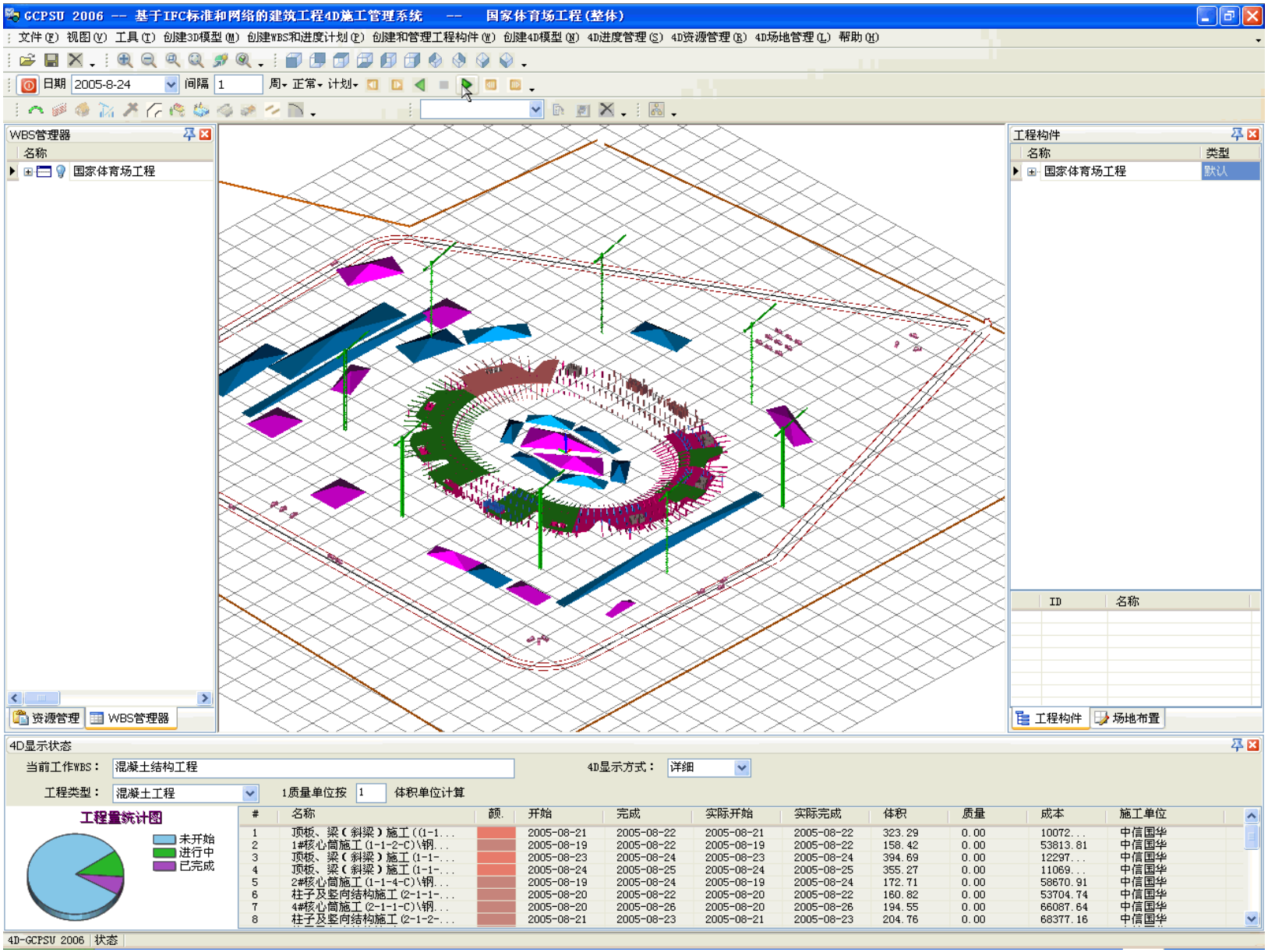
4D resource management



4D construction site management



By courtesy of Prof. Zhang Jianping



By courtesy of Prof. Zhang Jianping

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Summary

- The outline of Beijing 2008 Olympic Games was introduced.
- The outline of the venue construction was introduced.
- The information technologies used in the venue construction were summarized.
- The scenarios for using three typical information systems were described.

Thank you
for your attention