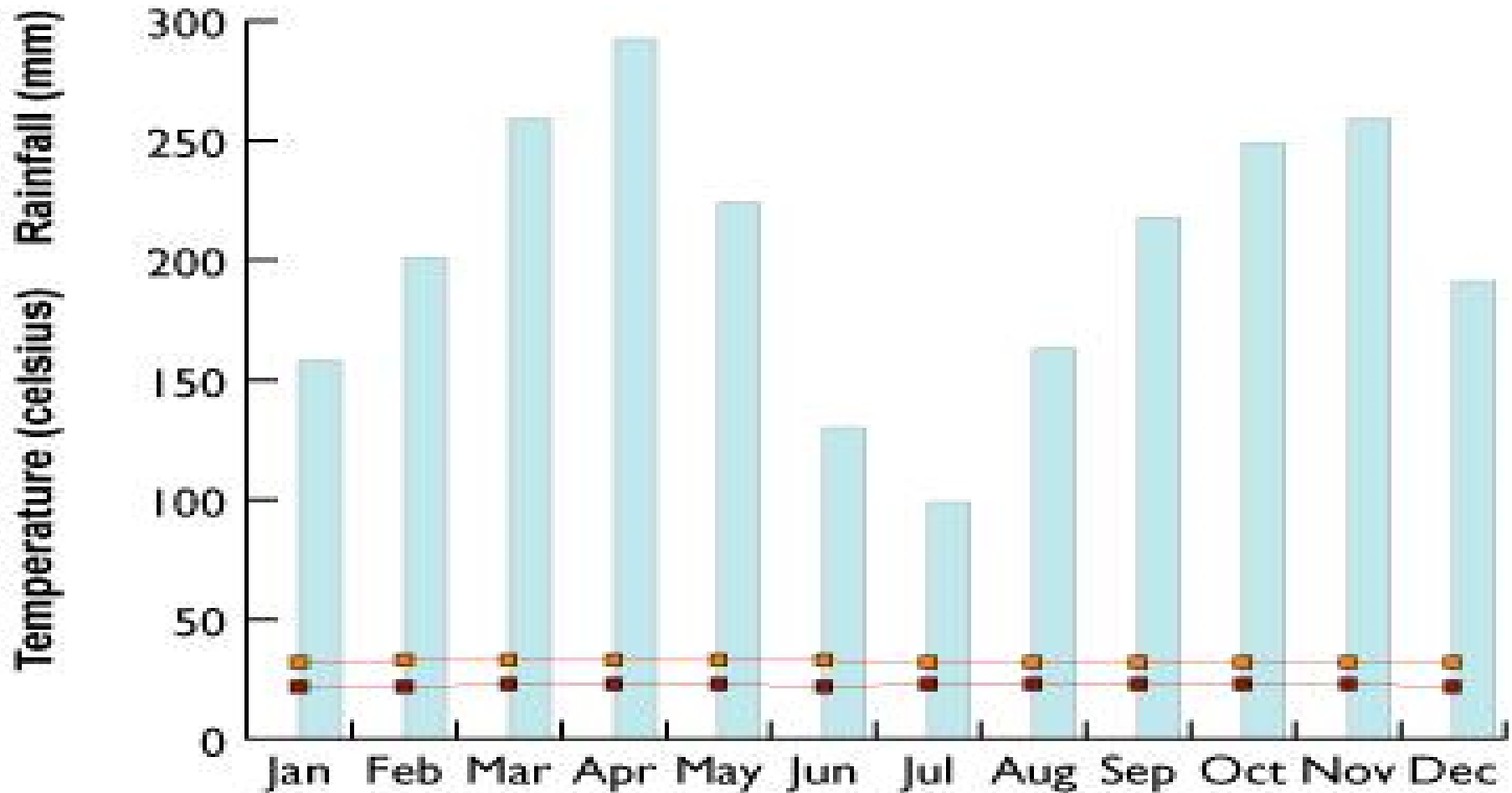




# **Information Management**

## **What is Information Management?**

# Information Management



- rainfall
- average daily temperature (max)
- average daily temperature (min)

# Introduction

- ◆ Information management is not the latest concept in computer industry
- ◆ need for successful organisation and execution of construction projects.
- ◆ Construction - the most information dependent industry which obtains information - detailed drawings, cost analysis sheets, budget reports, contract documents.

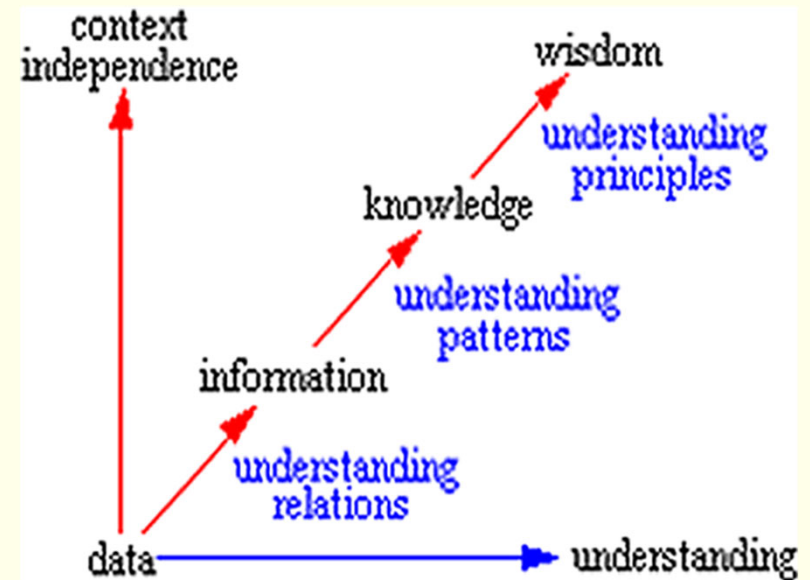
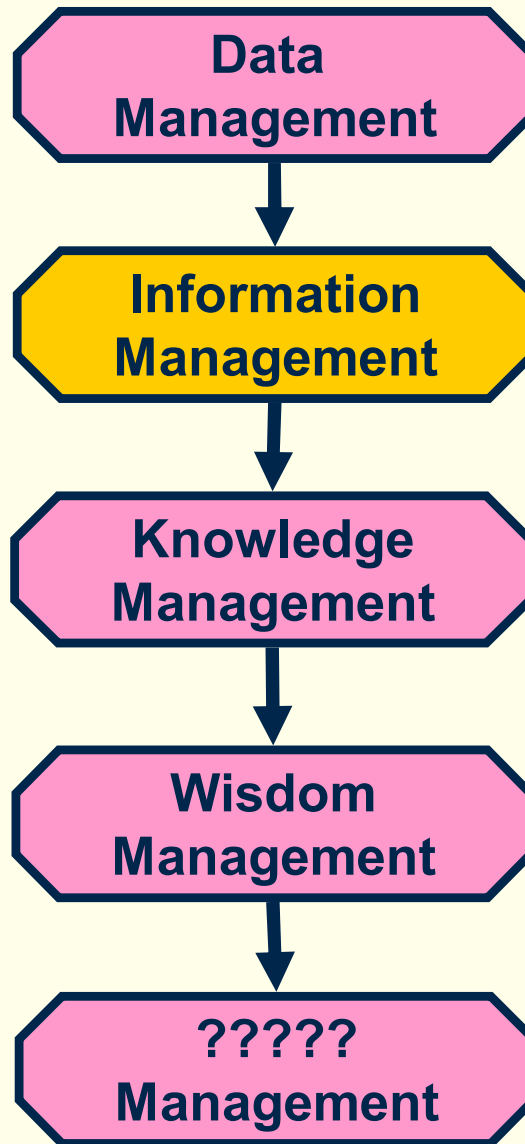
# ...Introduction

- ◆ During project life cycle, a lot of information generated and exchanged even for a small-size construction project.
- ◆ Information management - can highly influence cost, time and quality.
- ◆ Information management - have a significant impact on the success and profitability of the entire industry.
- ◆ e.g. manufacturing, aerospace and defence industries.

# Information Management



## Management Evolutions



# Why managing information?

- ◆ **First - traditional methods have not always worked.**
  - **Late supply of information - common occurrence.**
  - **Contractors claim for an extension of the contract period, to be paid by clients.**
  - **Construction personnel can cheat many others when information was badly managed.**

# Why managing information?

- ◆ Second - the scale of construction work has changed.
  - It is easy to manage information when projects are few and small.
  - For 1 million project might involve 100 drawings, but for 200 millions project could easily generate 10,000 drawings.
  - Become worse when the members of the project team try to cope with several projects at once.
  - Pressure from clients to complete quickly and competition within the industry.
  - The numbers of people and organisations that any individual has to communicate with also increased.



# Why managing information?

- ◆ Construction projects involve large numbers of people in different disciplines working on instructions passed on by others.
- ◆ It is important, those instructions are received when they are needed, where it needed, easily understood, and leave a clear record to show who has authorized what.
- ◆ If information correctly managed, it provides the framework - everybody knows what his responsibilities and when to do it.
- ◆ Or at the right time, right place and to the right person.

# What is information management ?

- ◆ IM concerns on communication system within a project
- ◆ cover the acquisition and dissemination of information – the analysis, design, implementation, evaluation and management of information.
- ◆ IM means - ensuring information is communicated to whoever needs it, whenever they need it, in whatever form they need it, so they may meet their objectives for the project.
- ◆ Information - eg. drawing, specifications, bills of quantities, schedules, financial statements

# Project co-ordination & benefits

- ❖ Project co-ordination is the planning of a project, well in advance of the start of pre-contract work and the control of the project through all its stages.
- ❖ Why ?? - to provide a smooth flow of info among the project's life cycle stages - efficient in communication.
- ❖ Project co-ordination - increase in efficiency, which can generate several benefits.

## ...Project co-ordination & benefits

1.12

Quit

- ❖ A study by NBA (The National Building Agency) in UK, the benefits are;
  - o *Better communication* - improved appreciation of the work of each participants involved;
  - o *shorter construction time* - getting specifications, schedules and details to the contractor at the right time;
  - o *Earlier occupation* - earlier completion of the project.

# Project Info & Info Technology

- ◆ Project information - defined as the information that describes the physical facility (product) and is required for managing its process.
- ◆ PI include site survey, drawings, specifications, BQ, project planning, and facility management.
- ◆ It usually handle by different departments within one organisation or different organisations, resulting in long loops.
- ◆ These loops can cause lengthy delays and inconsistencies of data used by different departments.

# Project Info & Info Technology

- ◆ Large amount of project information are generated and used during the various stages of a project life cycle.
- ◆ Sharing and maintaining this info in multiple disciplines and throughout a project's life cycle is a complex and difficult task
- ◆ IT becomes a vital tool for manage the info - computer and comm. technologies applied in the storage and retrieval of information.
- ◆ In the construction industry, it has been proven that the use of IT could reduce the fragmentation problem.

# Managing the flow of information

- ◆ problem of managing info - bring the participants to work and share the information together.
- ◆ construction industry - gain large benefits from the automation of info flows and the shared knowledge.
- ◆ By sharing information, the industry will increase its rate of learning and increase profit level.
- ◆ It will also create a more efficient market that will improve the industry performance and the quality of the product.

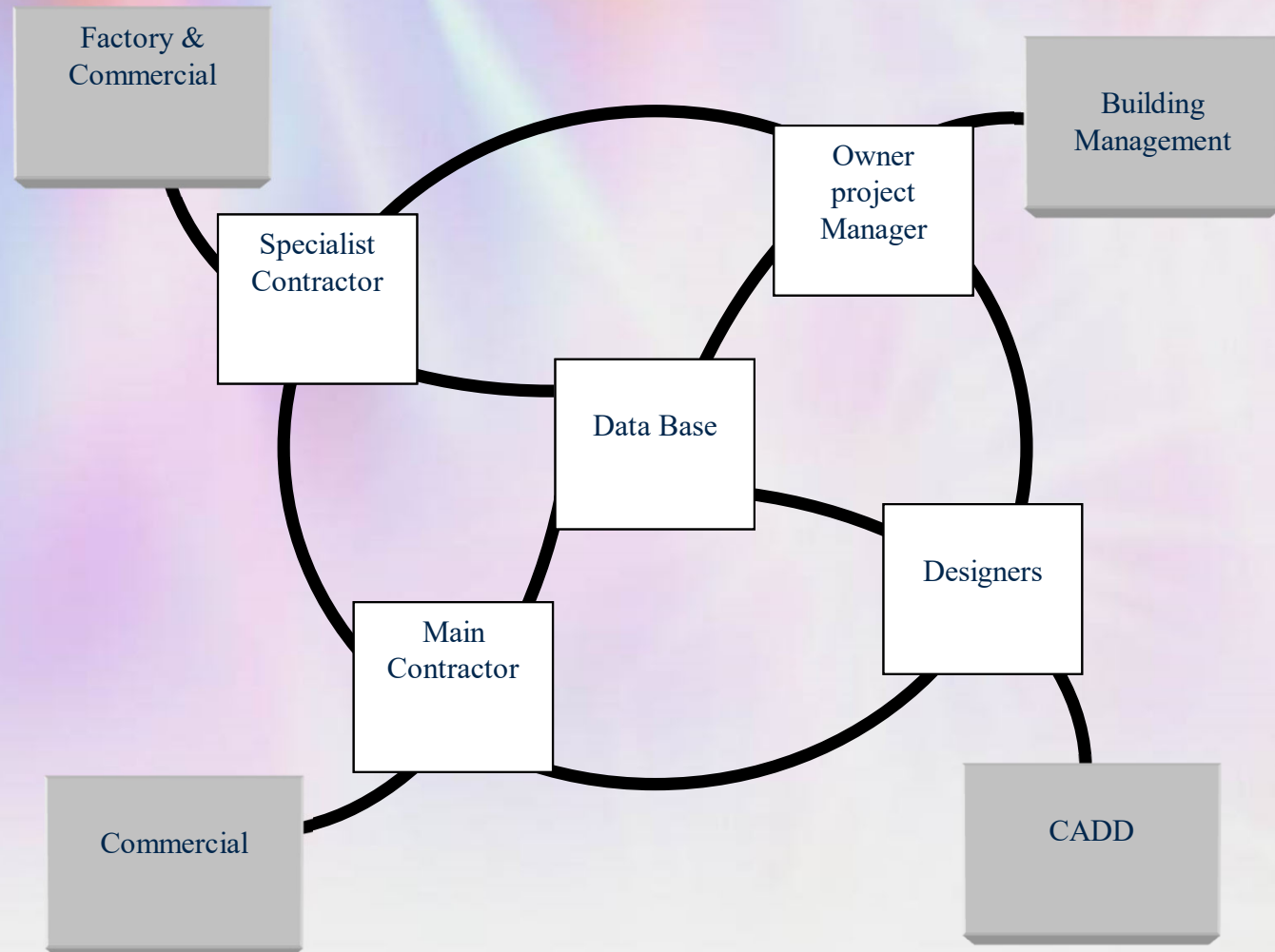
## ...Managing the flow of information

- ◆ Project central database - one of the solutions for sharing the information.
- ◆ The principle of a database is that it is a single centralised source of information.
- ◆ Such central databases are usually developed as information networks and can be used either at the project, enterprise or industry level.
- ◆ Many different users of information can share access to the same information from the database



# The role of IT for managing the info

- ◆ ICT is comp & comm. systems which transmit, exchange, retrieve, manipulated, calculate or display information.



- ◆ Electronic management of information through the use of IT is the most effective way to manipulate information.
- ◆ It allows users to store and retrieve information easily, gain faster, complete and accurate response, and be better informed of the relevant issues.
- ◆ However, **the effective use of IT** in the construction industry relies on the **ability to exchange and share information** among the project participants

# Activity 1

- 1. Search and list 5 examples of the application of information management?**
- 2. Explain the concept of information management that been applied in the application.**



# Information Management

**:: Summary ::**

<http://www.emporis.com>



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- High-rise Statistics
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- World's Tallest
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- Office
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- Lodging
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## Emporis Building Database / High-rise Buildings

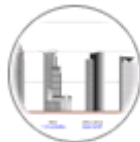
This database currently lists 87,360 skyscrapers.



### High-rise Statistics

See what continents and regions do best in our database.

74,835		completed
5,435		under construction
2,188		proposed
1,807		approved
1,439		demolished
1,079		never built
256		on hold
156		under reconstruction
150		vision
15		under demolition



### Building Diagrams

View building sketches of high-rise buildings in comparison.



### Emporis Skyscraper Award

Learn about our annual award which is presented to the designers of an outstanding skyscraper.



### World Trade Center

This section contains detailed information about the past and future of the WTC site in New York.

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- High-rise Statistics
- Tallest Buildings
  - World's Tallest
  - Tallest by Usage
    - Office
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    - Lodging
    - Hospital
    - Education
  - Tallest by Continent
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- Skyline Ranking
- Most Active

**Building Diagrams**

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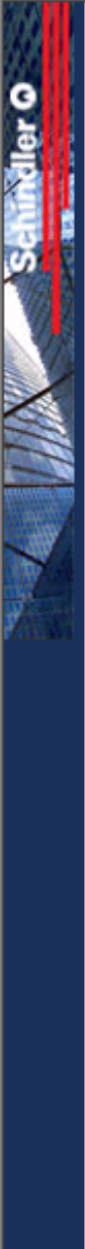
The world's source on buildings and structures

## Diagrams in Comparison

This section provides building sketches and diagrams of the world's tallest multi-storey buildings. A comparison always includes the top 10 buildings of a city.

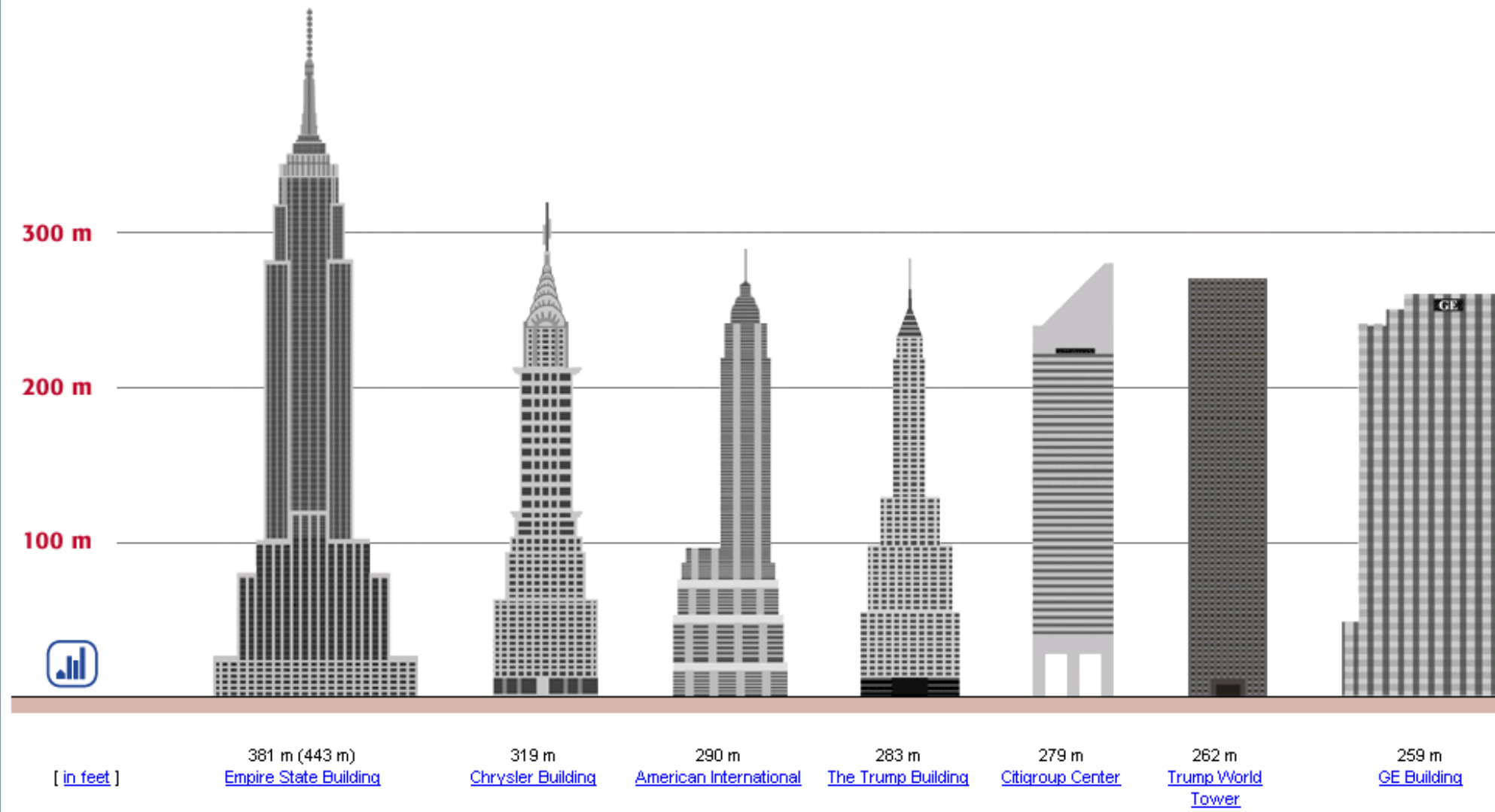
- |  |  |
|--|--|
| <b>North America</b> <ul style="list-style-type: none"><li><a href="#">Chicago</a> (U.S.A.)</li><li><a href="#">Houston</a> (U.S.A.)</li><li><a href="#">Los Angeles</a> (U.S.A.)</li><li><a href="#">New York City</a> (U.S.A.)</li><li><a href="#">Seattle</a> (U.S.A.)</li><li><a href="#">Toronto</a> (Canada)</li></ul> | <b>Asia</b> <ul style="list-style-type: none"><li><a href="#">Bangkok</a> (Thailand)</li><li><a href="#">Hong Kong</a> (China)</li><li><a href="#">Tokyo</a> (Japan)</li></ul> |
| <b>Europe</b> <ul style="list-style-type: none"><li><a href="#">Frankfurt</a> (Germany)</li><li><a href="#">Berlin</a> (Germany)</li><li><a href="#">London</a> (United Kingdom)</li></ul>   | <b>Oceania</b> <ul style="list-style-type: none"><li><a href="#">Melbourne</a> (Australia)</li></ul>   |
|  | <b>Middle East</b> <ul style="list-style-type: none"><li><a href="#">Dubai</a> (United Arab Emirates)</li><li><a href="#">Tel Aviv</a> (Israel)</li></ul>                      |





# New York City

## Building Sketches in Comparison



- High-rise Buildings
- Other Buildings
- Famous Buildings
- Construction Status
- Building Diagrams
- Companies
- Images
- Local Editorial Staff

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## Empire State Building



[\[Enlarge\]](#)



### Location

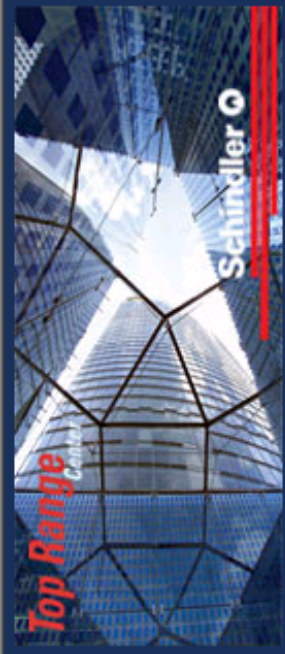
Street	350 5th Avenue
	<a href="#">FIND THIS STREET</a>
Postcode	10118
Neighborhood	<a href="#">Midtown South</a>
Borough	<a href="#">Manhattan</a>
City	<a href="#">New York City</a>
Country	<a href="#">U.S.A.</a>

### Technical Data

Height	381 m	1,250 ft
	This building has a structure on its roof which is not included in the <a href="#">structural height</a> .	
Floors (OG)	102	
Year (start)	1930	
Year (end)	1931	

### Building in General

Type of construction	<a href="#">high-rise building</a>
Style	<a href="#">art deco/art moderne</a>
Status	<a href="#">completed</a>





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## Structures

The engineering structures included in Structurae are first and foremost those which are necessary to establish lines of communication or transport, such as bridges, tunnels, dams, etc. But Structurae is also interested in those structures in which the civil or structural engineering aspect is very significant be it through the structure itself, its construction. You may browse by one of the following options:

<p><b>Name</b></p> <p>Alphabetical index by name in which all the structures are included that are part of this database.</p>	<p><b>Structural type</b></p> <p>Index by the type of structure, for example "cable-stayed bridge" or "suspension bridge", etc.</p>
<p><b>Function</b></p> <p>Index by the type of function or use that the structure has, e.g. railroad bridges, observation towers, stadiums, etc.</p>	<p><b>Construction method</b></p> <p>Methods of construction used such as incremental launching, new Austrian tunneling method, etc.</p>
<p><b>Geographic location</b></p> <p>For all structures a physical, geographical location is defined. You can browse the geographical index to find structures that way.</p>	<p><b>Year of completion</b></p> <p>If the year of completion (or the century/decade) is known, you can find the structure in the chronological index.</p>


### Recently added

- 22/06 Grand Rocher
- 21/06 San Lorenzo
- 21/06 Teufelstalbrücke
- 21/06 Holiday Inn Cape Town
- 21/06 Elsterbrücke A38
- 20/06 Cartama Tunnel
- 20/06 Maas-Albert Canal Junction Lock
- 20/06 Stadio San Siro
- 20/06 Pont de la Libération
- 20/06 Thermes de Cluny
- 20/06 Alte Wupperbrücke Leichlingen
- 20/06 Rundmischbett Märker

### Recently modified

- 22/06 Pleissebrücke A38
- 21/06 Teufelstalbrücke
- 21/06 Teufelstalbrücke
- 21/06 Palm Island Gateway Bridge
- 21/06 Montreal Olympic Stadium
- 21/06 Biodôme
- 18/06 Nahal Soreq Viaducts
- 17/06 Tunnel de Meyssiez
- 17/06 Viaduc de Meyssiez
- 17/06 Pfaffenberg-Zwenberg-

### Structure of the Month



**Hoover Dam**

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 Specializing in fabric structures using tubular space frame systems.  
[www.asfi.net](http://www.asfi.net)

[Steel Arch Structures](#)  
 Heavy, Commercial Steel Structures Distributed Worldwide 800-533-7773  
[www.banyansteelarchsys](http://www.banyansteelarchsys)

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# Structural Types

The structural types are divided into the following categories.

- ◆ Bridges and Viaducts
- ◆ Buildings
- ◆ Dams & Retaining Structures
- ◆ Off-shore and Marine Structures
- ◆ Towers and Masts
- ◆ Tunnels and Underground Structures

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Structural analysis software Download free, fully working demos.  
[www.risatech.com](http://www.risatech.com)

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### RAM International

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[E-store in bridge-parts.](#)

Bailey, Heavy Girder, Treadway, Compact, etc. Delivery world wide [www.linkspans.com](http://www.linkspans.com)

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## Structural Types / Bridges and Viaducts

- ◆ (bridge type undefined)
- ◆ Arch and Vierendeel truss bridge
- ◆ Arch bridge
- ◆ Cable-stayed arch bridge
- ◆ Cable-stayed bridge
- ◆ Cantilever bridge
- ◆ Clapper bridge
- ◆ Covered bridge
- ◆ Girder bridge
- ◆ Hyperbolic paraboloid bridge
- ◆ Lenticular bridge
- ◆ Movable bridge
- ◆ Pontoon bridge
- ◆ Portal bridge
- ◆ Ship bridge
- ◆ Slab and girder bridge
- ◆ Slab bridge
- ◆ Stressed ribbon bridge

- Browse by:
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  - Function
  - Construction method
  - Geographic location
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## Structural Types / Bridges and Viaducts / Arch bridge

### ◆ Two-hinged concrete deck arch bridge

There is a total of 2586 structures in this category.

Legend: Entry with pictures    **N** New entry (30 days)    **U** Updated entry (14 days)

Name	Year	Location	Status
22 of August Bridge	1867	Albi (81)	
703, Brücken Nr.		Duisburg (NRW)	in use
A-016 Overpass	2000	Poland	in use
A-031 Overpass	2000	Poland	in use
Aakerfährbrücke	1904	Duisburg (NRW)	demolished
Aakerfährbrücke	1997	Duisburg (NRW)	in use
Aarburg Bridge	1911	Aarburg (AG)	
Abattoir, Pont de l'		Montigny-sur-Aube (21)	
Abbassabad, Railroad bridge at		Turkey	
Abéou Bridge		Rians (83)	
Abingdon Bridge	1927	Abingdon	in use
Abra Bridge		Pétrito-Bicchisano (2A)	
Abteibrücke	1916	Berlin	in use
Accademia, Ponte dell'	1933	Venice (VN)	in use

Ornaments, water features, more! Great money-saving tips and links.  
[yardandgardendecor.com](http://yardandgardendecor.com)

[ADAPT-ABI Bridge Software](#)  
 Leading software for segmentally constructed bridges & cable stay  
[www.adaptsoft.com](http://www.adaptsoft.com)

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Structures / Brücken Nr. 703

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# Brücken Nr. 703

**Status:** in use

**Location:** Duisburg, North Rhine-Westphalia, Germany

**Crosses:** Ruhr River

**Structural Type:** Arch bridge

**Function / usage:** Railroad bridge



Click on the image to enlarge it.

There is a total of 6 images.

## Technical information

Structure part	Description	Value
<b>Construction materials used</b>		

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# Information Management

**:: Summary ::**

<http://earthquake.usgs.gov>



# Earthquake Hazards Program

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## Welcome to the U.S. Geological Survey Earthquake Hazards Program Website

Information on worldwide earthquake activity, earthquake science, and earthquake hazard reduction.

[List of Latest Worldwide Earthquakes](#)

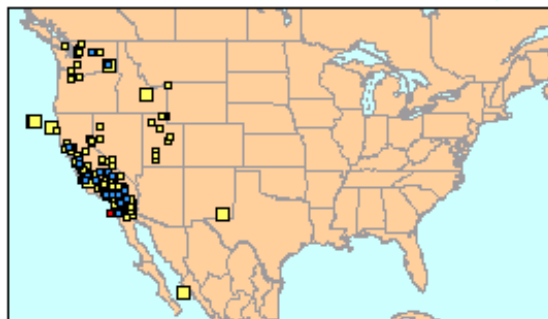
[Did You Feel It?](#)

### Maps of Recent Earthquake Activity

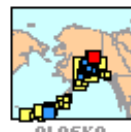
Click on **US** or **World** map for more information.

[USA \(M>1 during past 7 days\)](#)

Thu Jun 24 7:22:37 UTC



CONTIGUOUS 48 STATES



ALASKA



HAWAII



PUERTO RICO

[World \(M>2.5 during past 7 days\) \*\*NEW\*\*](#)

Thu Jun 24 7:22:35 UTC

### Earthquake News & Highlights

[Magnitude 5.3 OFFSHORE BAJA CALIFORNIA, MEXICO June 15, 2004](#)

[Magnitude 6.9 KAMCHATKA PENINSULA, RUSSIA June 10, 2004](#)

[06/08/04 - USGS Releases Quaternary Fault Database for the Nation](#)

[Magnitude 6.5 OFF THE EAST COAST OF HONSHU, JAPAN May 29, 2004](#)



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### Earthquake Activity

#### Current Earthquakes

[USA](#)  
[World](#)

#### NEIC Current Earthquake Information

#### ShakeMaps

#### Seismogram Displays

#### Past & Historical Earthquakes

#### Earthquake Notification E-mail

#### Earthquake Lists

### Magnitude Greater Than 2.5 Earthquakes From Around the World

This list contains all earthquakes with magnitude greater than 2.5 catalogued in the last week (168 hours). Magnitudes 5 and above are in bold font. Magnitudes 6 and above are in red. (Some early events may be obscured by later ones on the maps.)

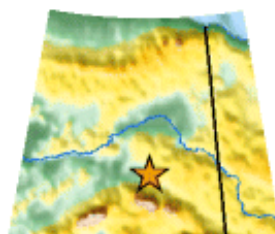
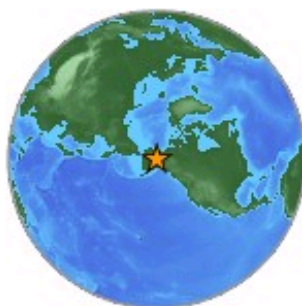
The most recent earthquakes are at the top of the list. Times are in [Coordinated Universal Time \(UTC\)](#). Click on the word "map" to see a ten-degree tall map displaying the earthquake. Click on an event's "DATE" to get additional text information.

**Update time = Thu Jun 24 7:17:53 UTC 2004**

	<u>MAG</u>	<u>DATE</u> y/m/d	<u>UTC-TIME</u> h:m:s	<u>LAT</u> deg	<u>LON</u> deg	<u>DEPTH</u> km	<u>region</u>
<a href="#">map</a>	3.7	<a href="#">2004/06/24</a>	<a href="#">06:57:02</a>	<a href="#">64.531</a>	<a href="#">-146.675</a>	<a href="#">15.0</a>	CENTRAL ALASKA
<a href="#">map</a>	2.5	<a href="#">2004/06/24</a>	<a href="#">06:39:18</a>	<a href="#">32.389</a>	<a href="#">-117.830</a>	<a href="#">11.5</a>	OFFSHORE BAJA CALIFORNIA, MEXICO
<a href="#">map</a>	2.7	<a href="#">2004/06/24</a>	<a href="#">00:18:16</a>	<a href="#">34.179</a>	<a href="#">-117.721</a>	<a href="#">6.3</a>	GREATER LOS ANGELES AREA, CALIFORNIA
<a href="#">map</a>	2.6	<a href="#">2004/06/24</a>	<a href="#">00:14:40</a>	<a href="#">59.983</a>	<a href="#">-152.099</a>	<a href="#">80.0</a>	SOUTHERN ALASKA
<a href="#">map</a>	2.8	<a href="#">2004/06/23</a>	<a href="#">22:15:38</a>	<a href="#">61.217</a>	<a href="#">-146.988</a>	<a href="#">1.0</a>	SOUTHERN ALASKA
<a href="#">map</a>	2.8	<a href="#">2004/06/23</a>	<a href="#">21:53:38</a>	<a href="#">63.194</a>	<a href="#">-151.329</a>	<a href="#">5.0</a>	CENTRAL ALASKA
<a href="#">map</a>	3.5	<a href="#">2004/06/23</a>	<a href="#">21:18:29</a>	<a href="#">51.644</a>	<a href="#">-171.250</a>	<a href="#">1.0</a>	FOX ISLANDS, ALEUTIAN ISLANDS, ALASKA
<a href="#">map</a>	2.6	<a href="#">2004/06/23</a>	<a href="#">16:20:06</a>	<a href="#">33.714</a>	<a href="#">-116.850</a>	<a href="#">18.0</a>	SOUTHERN CALIFORNIA
<a href="#">map</a>	4.6	<a href="#">2004/06/23</a>	<a href="#">10:13:56</a>	<a href="#">-19.486</a>	<a href="#">-69.116</a>	<a href="#">101.4</a>	NORTHERN CHILE
<b><a href="#">MAP</a></b>	<b>5.3</b>	<b><a href="#">2004/06/23</a></b>	<b><a href="#">08:48:27</a></b>	<b><a href="#">-19.435</a></b>	<b><a href="#">-68.900</a></b>	<b><a href="#">105.8</a></b>	<b>CHILE-BOLIVIA BORDER REGION</b>
<a href="#">map</a>	2.9	<a href="#">2004/06/23</a>	<a href="#">08:28:57</a>	<a href="#">63.322</a>	<a href="#">-145.212</a>	<a href="#">1.0</a>	CENTRAL ALASKA
<a href="#">map</a>	2.9	<a href="#">2004/06/23</a>	<a href="#">03:05:01</a>	<a href="#">54.604</a>	<a href="#">-161.251</a>	<a href="#">20.0</a>	ALASKA PENINSULA
<b><a href="#">MAP</a></b>	<b>5.3</b>	<b><a href="#">2004/06/23</a></b>	<b><a href="#">01:26:01</a></b>	<b><a href="#">-6.958</a></b>	<b><a href="#">124.971</a></b>	<b><a href="#">537.1</a></b>	<b>BANDA SEA</b>
<a href="#">map</a>	2.8	<a href="#">2004/06/22</a>	<a href="#">21:56:38</a>	<a href="#">32.447</a>	<a href="#">-117.817</a>	<a href="#">6.0</a>	OFFSHORE BAJA CALIFORNIA, MEXICO

**Earthquake Activity****Current Earthquakes**[USA](#)  
[World](#)**NEIC Current Earthquake Information****ShakeMaps****Seismogram Displays****Past & Historical Earthquakes****Earthquake Notification E-mail****Earthquake Lists**[M > 2.5](#)  
[M > 5](#)**Region Maps****Magnitude 3.7 - CENTRAL ALASKA**  
**2004 June 24 06:57:02 UTC****Preliminary Earthquake Report**Alaska Earthquake Information Center  
Geophysical Institute, University of Alaska Fairbanks

A minor earthquake occurred at 06:57:02 (UTC) on Thursday, June 24, 2004. The magnitude 3.7 event has been located in CENTRAL ALASKA. (This is a computer-generated message -- this event has not yet been reviewed by a seismologist.)

**Magnitude** 3.7**Date-Time** Thursday, June 24, 2004 at 06:57:02 (UTC)  
= Coordinated Universal Time  
Wednesday, June 23, 2004 at 10:57:02 PM  
= local time at epicenter**Location** 64.531°N, 146.675°W**Depth** 15 km (9.3 miles) set by location program**Region** CENTRAL ALASKA**Distances** 16 km (10 miles) E (86°) from **Salcha, AK**  
23 km (14 miles) NNE (13°) from **Harding-Birch Lakes, AK**  
26 km (16 miles) ESE (119°) from **Eielson AFB, AK**  
61 km (38 miles) SE (124°) from **Fairbanks, AK****Location Uncertainty** Error estimate not available

## **Activity 2: Answer the questions with your friends**

- 1. What is information management?**
- 2. How do you manage the information?**
- 3. Why we need to manage the information?**
- 4. What are the differences between data and information?**
- 5. Explain the evolution from data management to knowledge management.**
- 6. What are the benefits of IT in managing the information?**

# Information Management



**The End**