A tower crane is shown against a blue sky background. The crane's tower is vertical, and its jib extends horizontally to the left. The text is overlaid on the image.

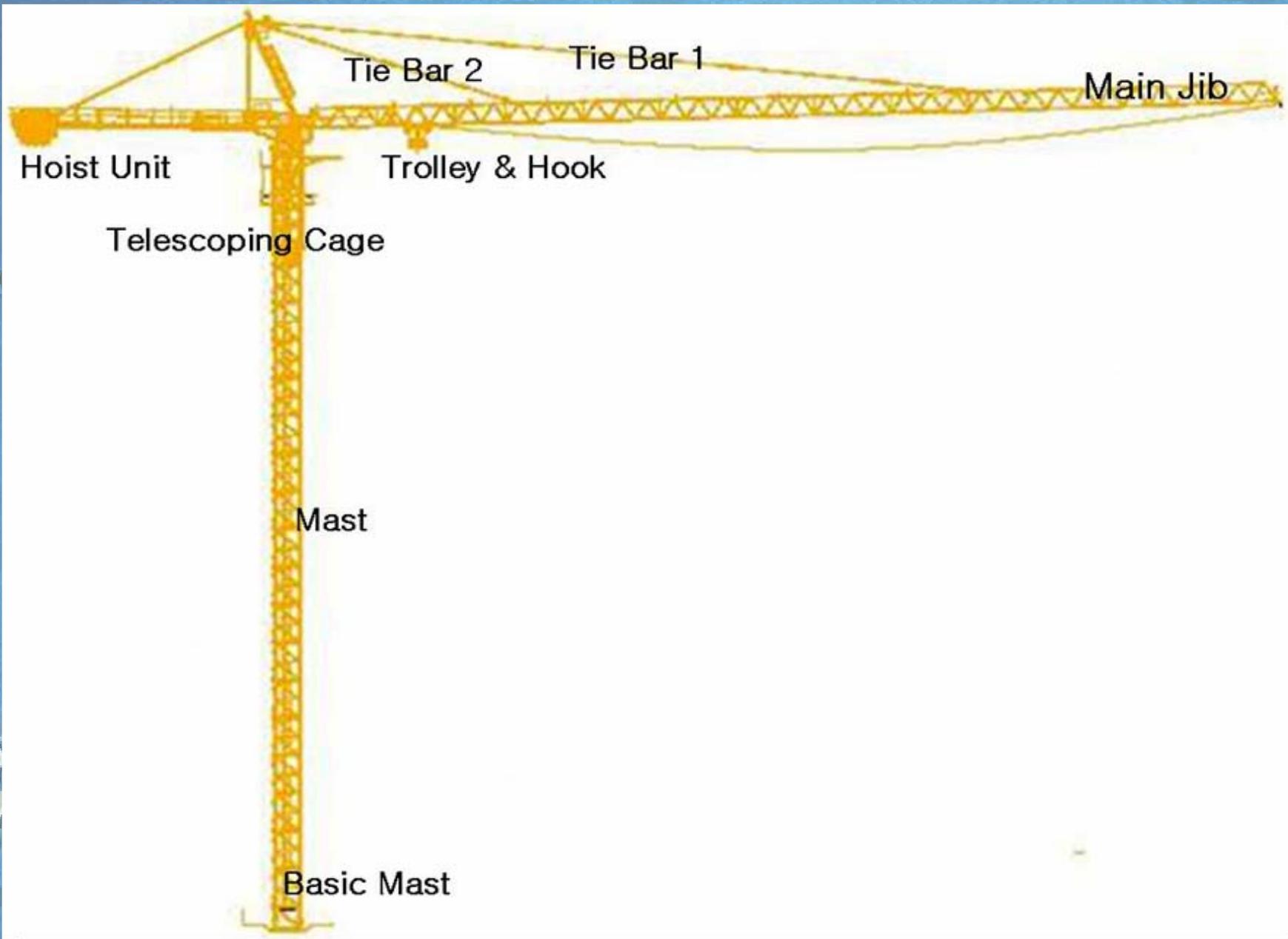
DESIGN OPTIMIZATION OF TOWER CRANE

**Hanyang University
School of Mechanical Engineering**

Team : Carpe Diem

Contents

- **The Problem Formulation Process**
 - » **Step 1 : Problem Statement**
 - » **Step 2 : Data & Information Collection**
 - » **Step 3 : Design Variables**
 - » **Step 4 : Object Function**
 - » **Step 5 : Constraints**
- **Future Plan**
- **Q & A**

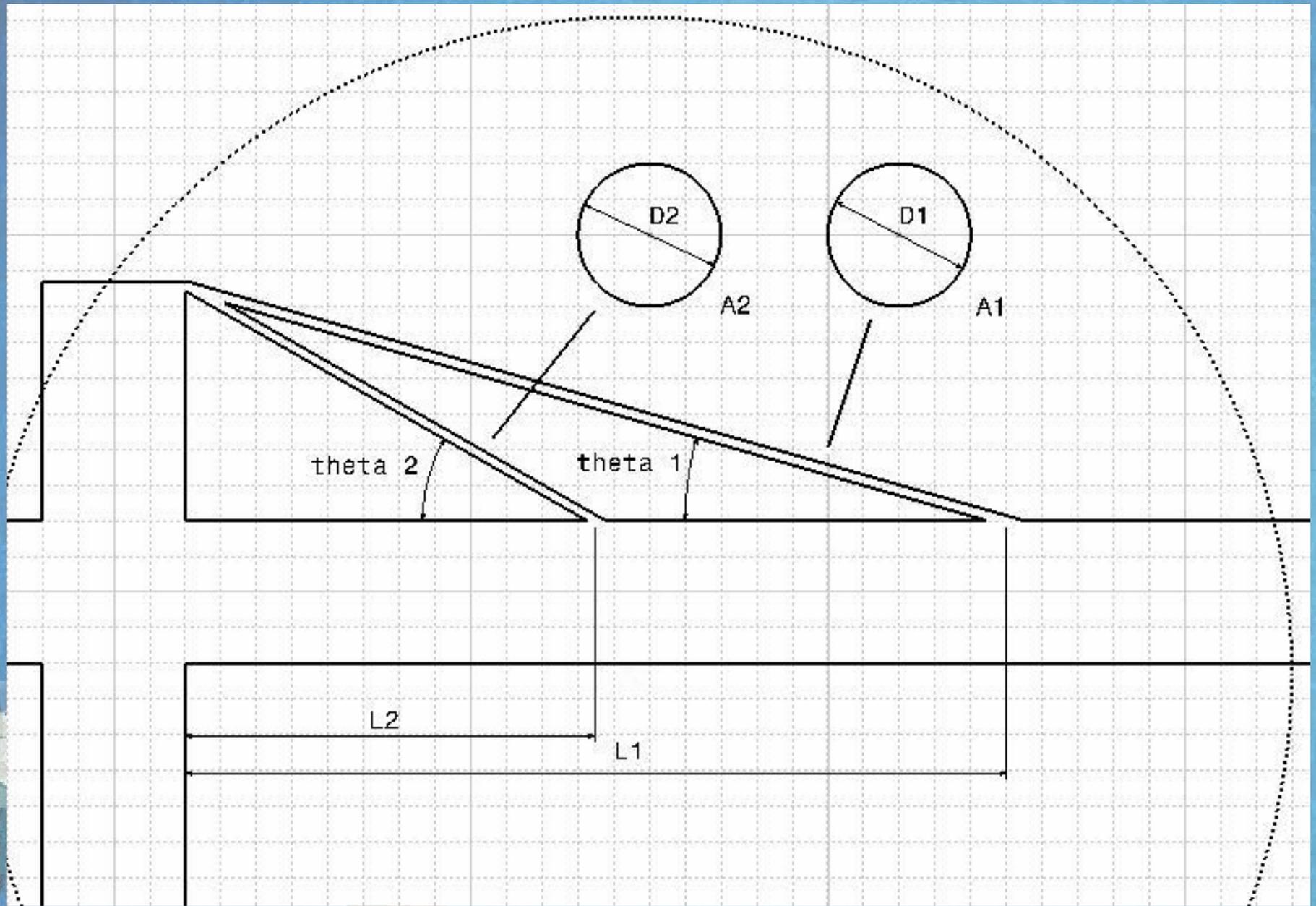


Specified Data

$$P_{\max} = 30 \text{ kN}$$

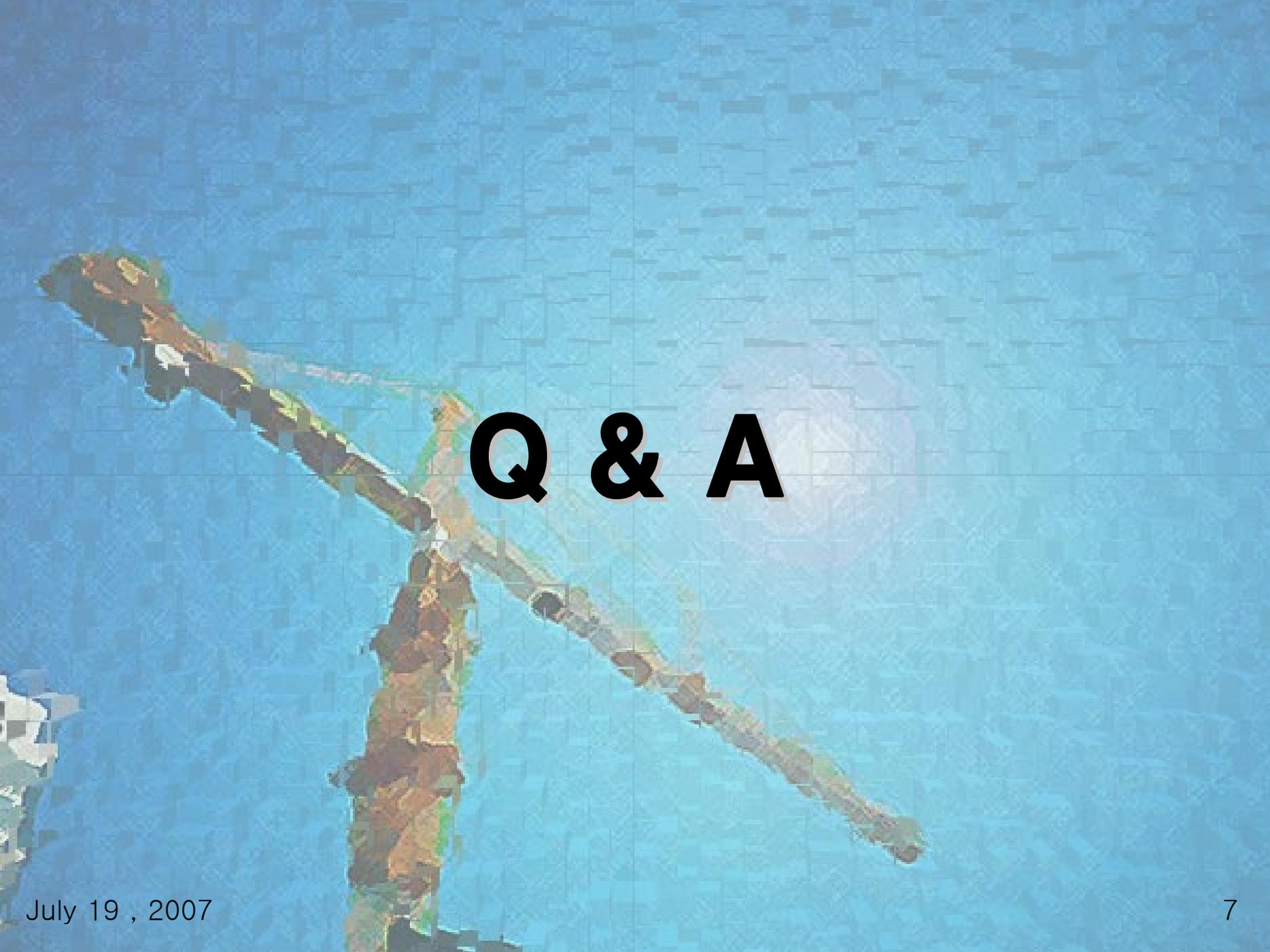
$$A_n = \frac{D_n^2}{4} \pi \quad (n = 1, 2)$$

$$V_n = A_n \cdot \frac{L_n}{\sin \theta_n} \quad (n = 1, 2)$$



Future Plan

- **Tower Crane의 해석을 위한 CAE 모델링 및 해석 기술 개발**
- **최적설계기술을 이용한 설계 결과 도출**
 - 설계문제 파악을 위한 Parametric Study
 - 최적화 기법 선정
 - 소프트웨어 간 인터페이스 설정을 통한 설계 시스템 구축
 - 최적설계를 수행하여 최적해 도출

An aerial photograph of a tropical coastline. A large, irregularly shaped lagoon or bay is the central feature, surrounded by a narrow strip of land. A prominent peninsula extends from the left side into the lagoon. The water is a deep blue, and the land is a mix of green and brown, suggesting a mix of vegetation and possibly some cleared areas. The text 'Q & A' is overlaid in the center of the image.

Q & A

July 19 , 2007