Module B Architectural Design and Innovation (35 points)

1、Overall Task and Project Overview

Situated in the city center, this modern detached office building (low-rise, no basement, with a total floor area of up to 5,000 square meters) is designed to accommodate a variety of businesses. The tenants include design company, art studios, and architectural firms, all of which prioritize the comfort and efficiency of their office environments, aiming to spark creativity in a superior working atmosphere. The office building is situated on a well-defined rectangular plot, surrounded by comprehensive municipal facilities and convenient transportation, adjacent to major urban roads and subway stations. To the north, it overlooks an urban road, while to the south, it faces a city park, offering pleasant views. The west and east sides are existing office buildings. The project requires the completion of architectural modeling, facade design. The submission of the final results focuses on the evaluation of style creativity, functional compatibility, and application of green technologies.

Note: The window positions shown on the plan are for reference only.

2、Score distribution and task requirements

PART1 Building modeling (20 points)

1. Model construction (12 points):

(1) Model integration: Link the frame structure model provided by the structural engineering major to ensure that the axis network and elevation are completely aligned.

(2) Component creation:

Draw the exterior wall and interior wall according to the drawings;

· Arrange standard floor doors ;

· Draw interior decoration model (including wall, floor and ceiling);

· Draw the staircase model (including railings and handrails);

· Model accuracy: reach the LOD300 standard, component size error less than or equal to 5mm.

2. Attribute filling (4 points):

(1) Add material property information to the architectural components created in 1 according to the design description.

3. Output requirements (4 points):

(1) Draw a building floor plan (scale 1:100), which should include:

· Ground Floor plan and axis network

· Functional zoning annotation

· Door and window number and opening direction

· Doors, Windows, axis network and rooms should be marked, and the room model should indicate the name and area.

PART2 Facade design (15 points)

Task requirements: Combine the office needs of enterprises and the site environment in the overall task, complete the facade design scheme, integrate the design logic, technical parameters and AI visualization effect through PPT, focusing on style creativity, functional adaptation, material structure and green technology.

1. Programme description (7 points)

（1）Style creativity (2 points):

· Combine the characteristics of the resident enterprises, such as the creative attributes of design enterprises, and design their own facade modeling language (the

correlation between the modeling and the resident enterprises should be explained, such as geometric composition, color style, abstract art symbols, etc.);

· Choose the main color independently, and explain the logic of color system to create office atmosphere.

（2）Function response (3 points):

· Design the window wall ratio and shading system by oneself according to the landscape advantages on the south side and the actual situation of other facades;

· Design the functional components of the facade according to the orientation characteristics of the facade, and specify the size of the components;

· Complete the design of vertical greening scheme based on site environment and building structure, including plant selection, planting method, irrigation system and landscape function, etc., which should reflect the unity of ecology, beauty and practicability.

（3）Green building and energy saving technology (2 points):

· Select green building and energy saving technology on the roof, and explain the technical parameters.

· Select green building and energy saving technology for the facade, and explain the technical parameters

2. Materials and construction (5 points)

（1）Main material selection (3 points):

· The facade material should be selected independently, and the compatibility between the material characteristics and the design style should be explained;

· Explain the design logic of material combination.

· Explain the design logic of virtual and real rhythm.

3. Modeling requirements (2 points)

· After the facade design is completed, ALLPLAN should be used to complete the modeling and finally submit the model results.

4. Visualization and PPT integration (3 points)

（1）Renderings (2 points): Generate facade related renderings (Quantity to be Determined by Oneself), including at least:

· Outdoor view of human view point, bird's eye view and special effect rendering (such as night scene or lighting design) .

（2）PPT Presentation (1 point):

PPT Must include:

· Cover page: project name, design concept keywords;

· Scheme page: style and creativity, functional response, green building and energy saving technology, material selection;

· Construction page: material combination diagram, node detail and effect comparison;

· Logical requirements: text and graphics are mixed, and the chain of "concept → technology → effect" is presented.

PART3 Output of results

(1) BIM model: submit the Allplan file (It includes the first part of the architectural professional model and the structural linked model, as well as the second part of the building facade model).

(2) Exterior facade design: submit PPT documents (including scheme description, materials and construction, effect drawings, etc.).