

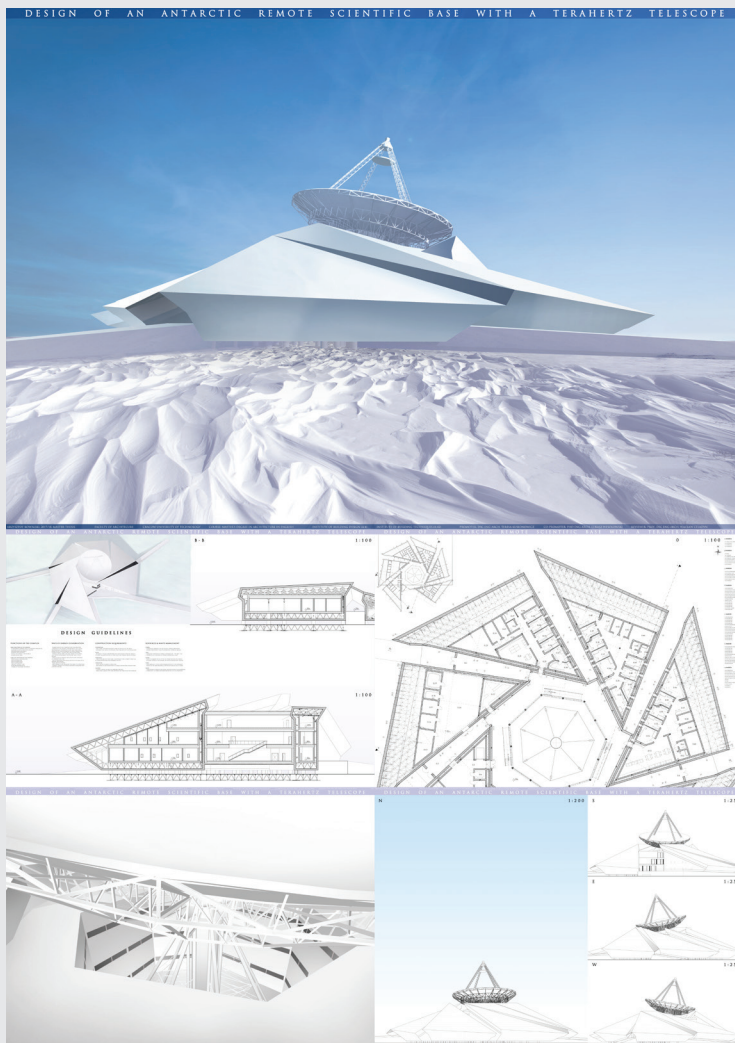
# PROJEKT ANTARKTYCZNEJ ZDALNEJ BAZY NAUKOWEJ Z TELESKOPEM TERAHERCOWYM DESIGN OF AN ANTARCTIC REMOTE SCIENTIFIC BASE WITH A TERAHERTZ TELESCOPE

AUTOR:  
KOWALSKI KRZYSZTOF

PROMOTOR:  
DR HAB. INŻ. ARCH. TERESA KUSIONOWICZ

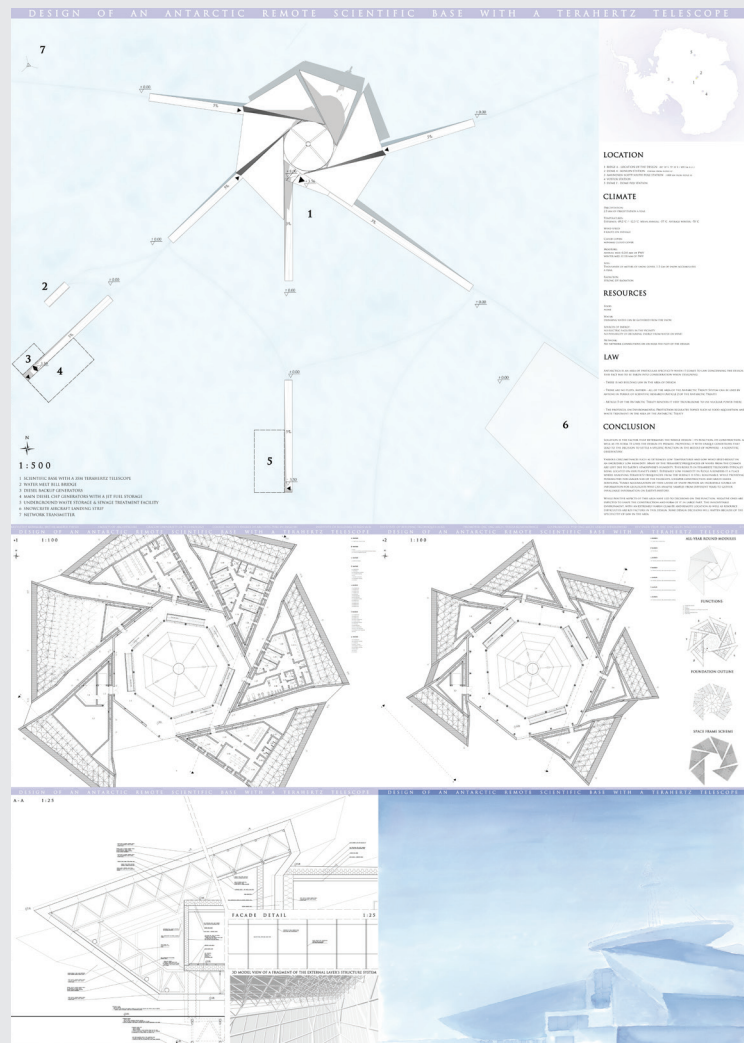
PROMOTOR POMOCNICZY:  
DR INŻ. ARCH. ŁUKASZ WESOŁOWSKI

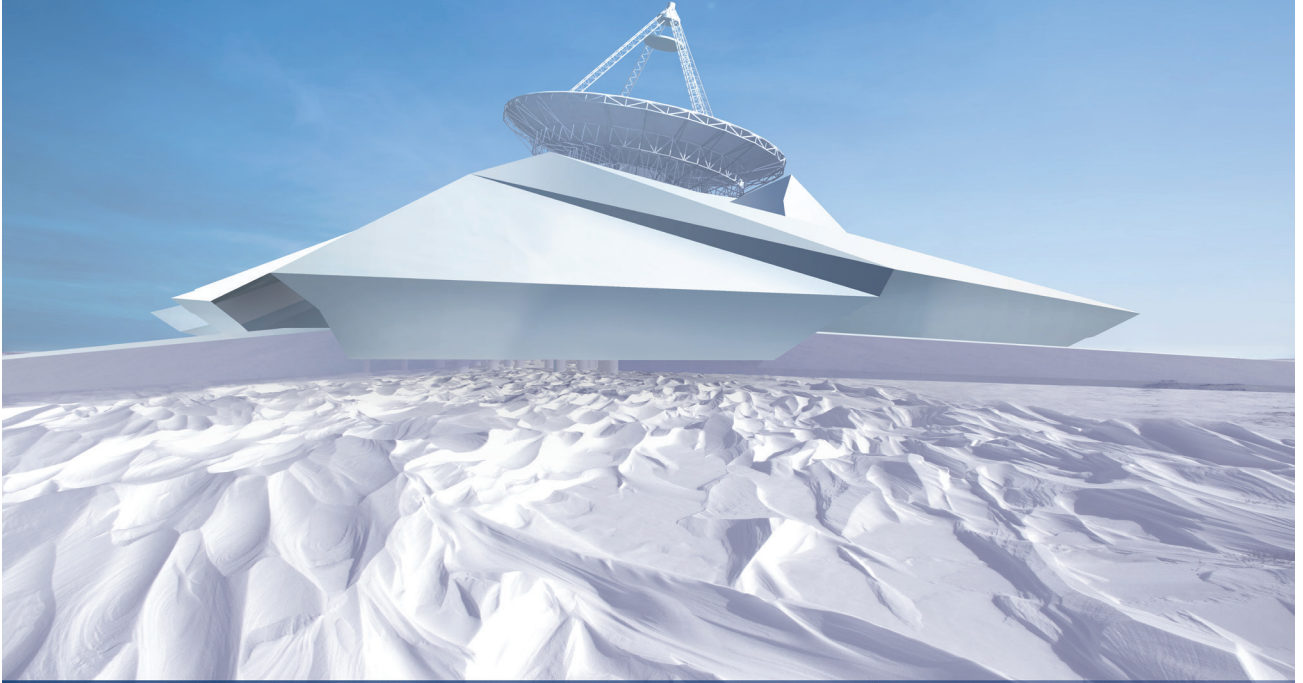
INSTYTUT PROJEKTOWANIA BUDOWLANEGO, ZAKŁAD TECHNIK BUDOWLANYCH



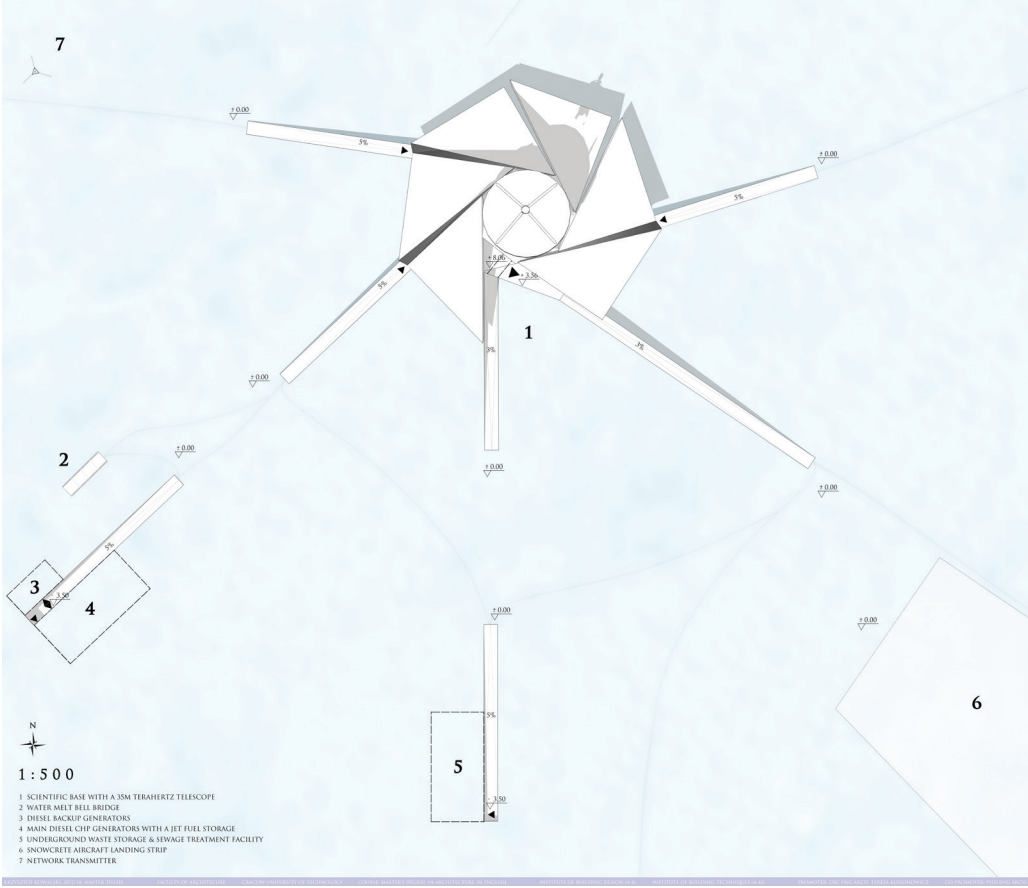
Projekt bazy naukowej w Ridge A na Antarktydzie - jednym z najbardziej nieprzyjaznych człowiekowi miejsc na świecie, a zarazem najbardziej odpowiednich dla obserwacji terahercowych. Budynek w swej istocie estetyczno-technicznej w całości wynika bezpośrednio z warunków terenu na którym jest projektowany i funkcji, jaką ma pełnić

Design of a scientific base in Ridge A in Antarctica - one of the most hostile places in the world, but also the most fitting for terahertz observations. The building in its technical and aesthetic aspects is a direct outcome of conditions of the area and the function it is designed to serve.





KOWALSKI KRZYSZTOF




**LOCATION**

1. SITE A - LOCATION OF THE DESIGN - 60° 17' 41" S 148° 44' 11" W
2. SITE B - LOCATION OF THE DESIGN - 60° 17' 41" S 148° 44' 11" W
3. LOCATION OF THE NORTH POLE STATION - 90° 00' 00" S 0° 00' 00" W
4. LOCATION OF THE SOUTH POLE STATION - 90° 00' 00" S 0° 00' 00" W
5. SITE C - LOCATION OF THE DESIGN - 60° 17' 41" S 148° 44' 11" W

**CLIMATE**

PRECIPITATION: 23 mm (PRECIPITATION A YEAR)

TEMPERATURE: 10.2 °C

EXTREMES: 49.2 °C / 12.2 °C (MEAN ANNUAL: 07 °C, AVERAGE WINTER: 70 °C)

WINDSPEED: 4 km/h ON AVERAGE

CHARACTERISTICS: WINDY, CLOUDY, COLD

NOTES: AVERAGE WIND SPEED OF 10 km/h, WINDSPEED 10 km/h OF 10 km/h, WINDSPEED 10 km/h OF 10 km/h

**RESOURCES**

FOOD: NONE

WATER: DRINKING WATER CAN BE OBTAINED FROM THE ICEBERG

SOURCES OF ENERGY: NO ELECTRICITY IS AVAILABLE IN THE AREA, NO POTENTIAL FOR OBTAINING ENERGY FROM WIND OR WAVE

NEEDS: NO NETWORK CONNECTIONS ON OR NEAR THE SITE OF THE DESIGN

**LAW**

ANTARCTICA IS AN AREA OF PARTICULAR SPECIFICITY WHEN IT COMES TO LAW CONCERNING THE DESIGN. THIS FACT CAN BE OF BASIC CONSIDERATION WHEN DESIGNING:

- THERE IS NO BELONGING LAW IN THE AREA OF DESIGN.
- THERE ARE NO FLIGHT BARBERS. ALL OF THE AREA OF THE ANTARCTIC TREATY SYSTEM CAN BE USED BY ANYONE IN FURTHER OF SCIENTIFIC RESEARCH (ARTICLE 2 OF THE ANTARCTIC TREATY).
- ARTICLES 1 AND 2 OF THE ANTARCTIC TREATY REQUIRE OF EVERY PARTICIPATING STATE TO ADOPT MEASURES TO PROTECT THE ENVIRONMENT.
- THE PROTOCOL ON ENVIRONMENTAL PROTECTION REGULATES SUCH AS FOOD WASTE AND WATER TREATMENT IN THE AREA OF THE ANTARCTIC TREATY.

**CONCLUSION**

ANTARCTICA IS THE FACTOR THAT DETERMINES THE WHOLE DESIGN. ITS FUNCTION, ITS CONSTRUCTION AS WELL AS THE DESIGN, IT CAN BE DESIGNED TO PROTECT, PRESERVE IT FROM A CONSTRUCTION THAT CAN BE OF THE DESIGN WITH A SPECIFIC FUNCTION IN THE AREA OF DESIGN.

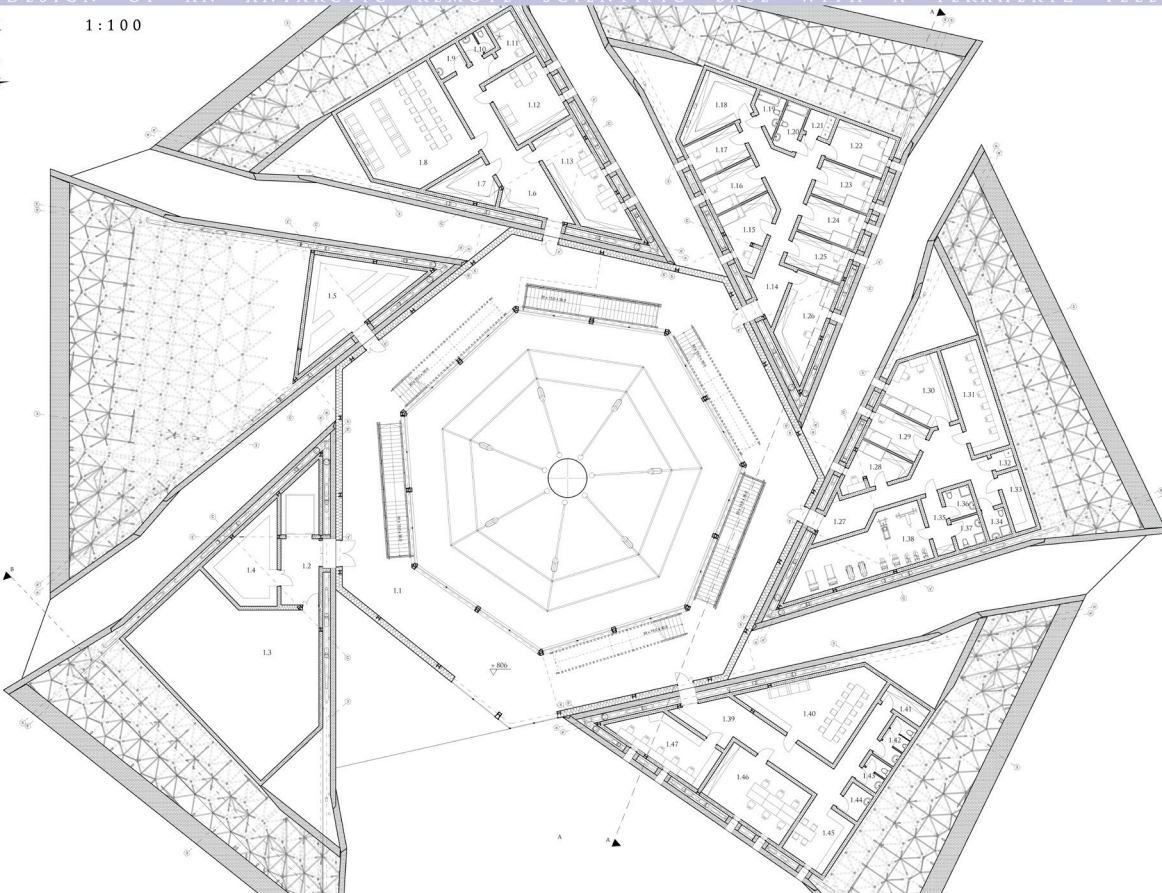
VARIOUS CONSIDERATIONS SUCH AS EXTREMELY LOW TEMPERATURES AND LOW WIND SPEEDS LEAD TO AN UNUSUALLY LOW ANTIWIND SYSTEM. THE RESULTS IN THE DESIGN THROUGH THE USE OF AN UNUSUALLY LOW ANTIWIND SYSTEM. THE RESULTS IN THE DESIGN THROUGH THE USE OF AN UNUSUALLY LOW ANTIWIND SYSTEM. THE RESULTS IN THE DESIGN THROUGH THE USE OF AN UNUSUALLY LOW ANTIWIND SYSTEM.

WHILE POSITIVE ASPECTS OF THIS AREA ARE LED TO DESIGNING THE FUNCTION, NEGATIVE ONES ARE IDENTIFIED THROUGH THE CONSTRUCTION AS WELL AS IN THE DESIGN. THE ENVIRONMENTAL ENVIRONMENT WITH AN EXTREMELY UNUSUAL CLIMATE AND REMOTE LOCATION AS WELL AS REMOTE LOCATIONS ARE NOT FACTORS IN THE DESIGN. SOME DESIGNERS WILL HAVE A BOUNDARY OF THE SPECIFICITY OF LAW IN THE AREA.



DESIGN OF AN ANTARCTIC REMOTE SCIENTIFIC BASE WITH A TERAHERTZ TELESCOPE

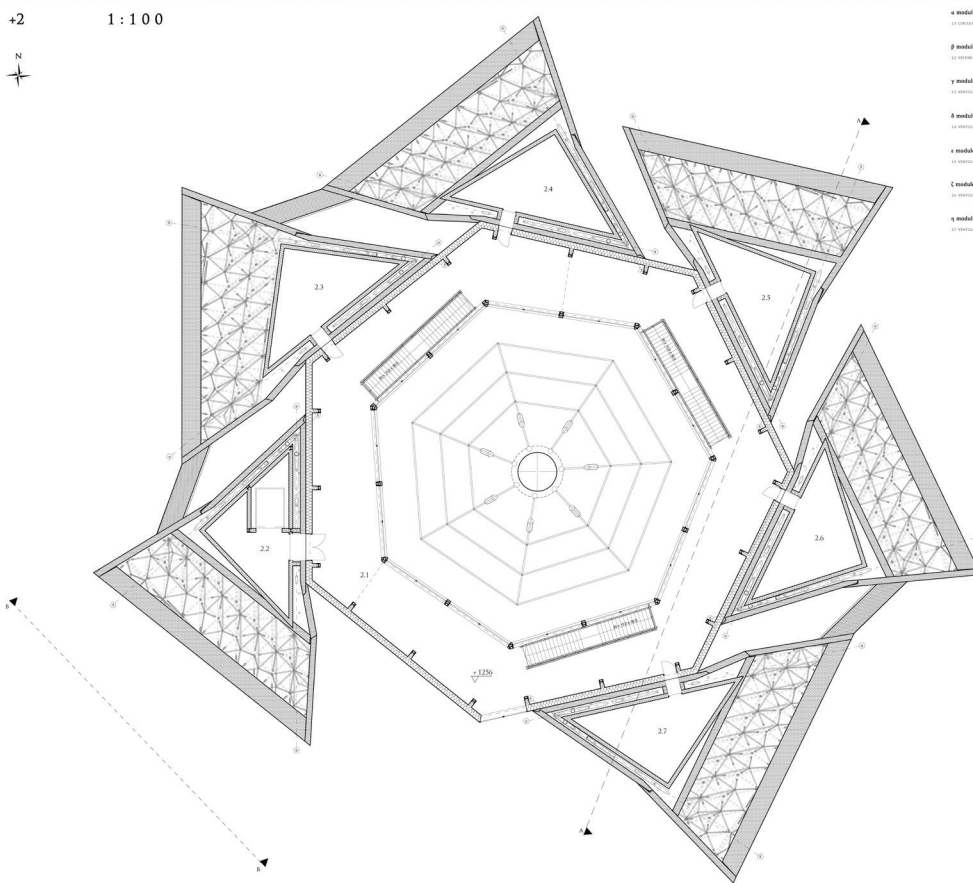
+1 1:100



- a module**  
1.100-1.105
- b module**  
1.106-1.110
- y module**  
1.111-1.115
- d module**  
1.116-1.120
- e module**  
1.121-1.125
- c module**  
1.126-1.130
- g module**  
1.131-1.135

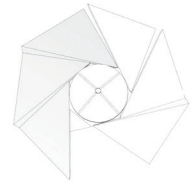
DESIGN OF AN ANTARCTIC REMOTE SCIENTIFIC BASE WITH A TERAHERTZ TELESCOPE

+2 1:100



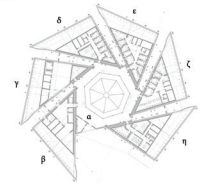
- a module**  
2.100-2.105
- b module**  
2.106-2.110
- y module**  
2.111-2.115
- d module**  
2.116-2.120
- e module**  
2.121-2.125
- c module**  
2.126-2.130
- g module**  
2.131-2.135

ALL-YEAR ROUND MODULES



FUNCTIONS

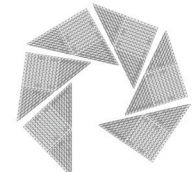
- 1. LABORATORY
- 2. STORAGE
- 3. OFFICE
- 4. RECREATION & FITNESS FACILITY
- 5. COMMUNICATIONS



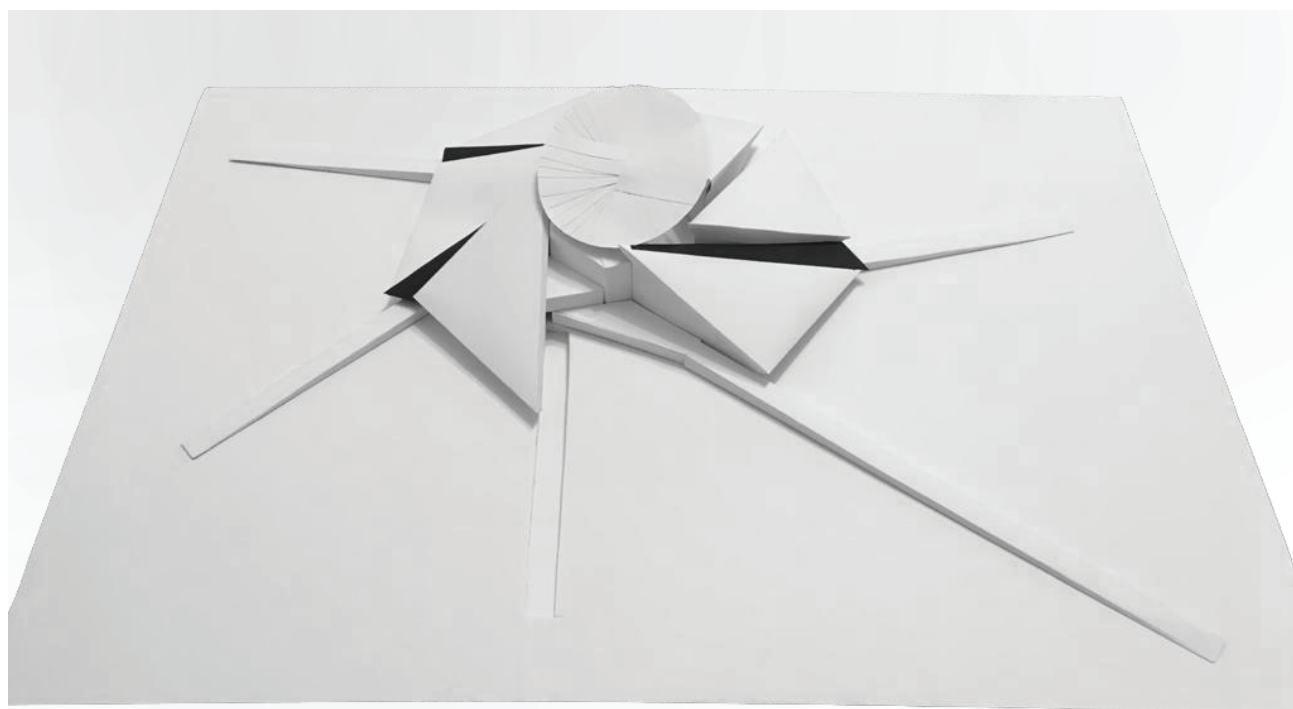
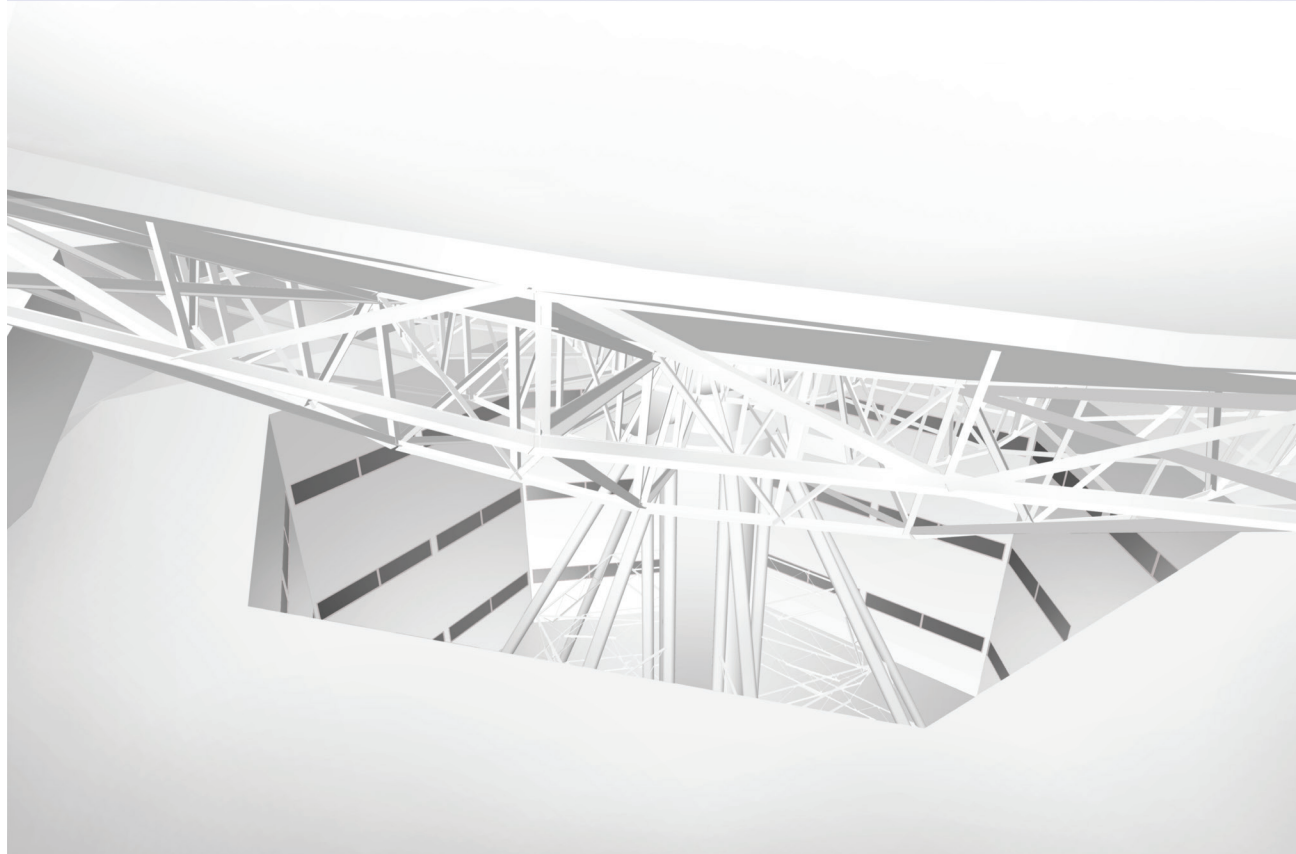
FOUNDATION OUTLINE



SPACE FRAME SCHEME



KOWALSKI KRZYSZTOF



KOWALSKI KRZYSZTOF

