

A Master Plan for the 2002 World Cup Sports Complex in the Suwon City, Korea

Kim, Sung - Kyun

Department of Landscape Architecture, Seoul National University

수원시 2002 월드컵 종합체육공원 기본계획

김성균

서울대학교 조경학과

초록

본 연구는 수원시의 다양한 레크레이션의 수요증대와 지역주민을 위한 운동시설의 부족에 대응하기 위해 지역주민의 근린생활 체육시설을 확충하고, 수원시 연고의 삼성 블루윙즈 프로축구팀의 축구전용구장 및 연습구장 마련 및 2002년 월드컵 축구대회를 유치하고자 조성된 복합 스포츠단지에 대한 기본계획안이다.

개발방향은 1)21세기의 생활패턴에 맞는 생활체육공간 조성, 2)국제적 수준의 운동시설 및 인프라 구축, 연중이용이 가능한 시민을 위한 커뮤니티 공간 조성, 3)친환경적이고 지속가능한 공간 조성, 4)복합적 토지이용 개념을 도입하여 토지활용도 및 재정수입의 증대, 5)쾌적한 보행시스템 제공, 6)도시의 랜드마크로서 주변 도시체계와 연계성 강화, 7)수원의 역사, 문화적 상징성 제고 등이다.

이를 위해 축구전용구장, 보조경기장, 잔디연습구장, 흙연습구장, 헬리포트장 등 축구전용구장 관련시설, 실내체육관, 실내아이스링크 등 기타 체육시설, 야외수영장, 농구장, 테니스장, 게이트볼장, 볼링장, 헬스장 등 생활체육시설, 스포츠용품 몰, 식음시설 등 편의시설, 야외공연장, 어린이정원, 영화관, 축구박물관 등 위락/문화시설, 산책로, 체력단련코스, 전망대 등 휴양시설, 그리고 주차장, 녹도, 녹지 등 기타 부대시설이 도입되었다.

본 연구는 종합체육공간이 단순히 체육시설이 모여 있는 곳이 아니라 시민들이 운동과 더불어 휴식, 등산, 놀이, 자연학습 등 다양한 여가활동을 할 수 있도록 계획되었다. 상업시설, 커뮤니티 시설 등이 복합적으로 개발되어 있기 때문에 경기가 열릴 때뿐만 아니라 4계절 내내 주중, 주말 및 휴가기간에 가족과 더불어 휴식을 취할 수 있는 레크레이션 및 커뮤니티 공간으로 중요한 역할을 하도록 계획된 새로운 개념의 체육공간이라는데 의의가 있다.

Key Words : Sport Complex Design, Sustainable Sports Park Design, Suwon World Cup Sports Complex, Soccer Stadium Planning

I. INTRODUCTION

Suwon City, located south of Seoul planned a sports complex in preparation for the 2002 World Cup, to support local pro soccer team, Blue Wings of Samsung Co., and to satisfy people's demand for sports facilities.

I had proposed this plan in 1995~6 in conjunction with Cheongwoo Environmental Design Institute and Samsung Construction Co.(Suwon City, 1996) The Stadium was designed by Samwoo Design Co. in cooperation with a French design company following the master plan we proposed. Construction is done by Suwon City and Samsung Co. The first stage areas for the soccer stadium and attached facilities are developed by Samsung Co. and the area will be used by Samsung's pro-soccer team, the Blue Wings for 20 years and donated to Suwon City after that. The 2nd stage areas for sports facilities, parks and recreation areas are to be developed by Suwon City.

The significance of this development is the objective to facilitate mixed-use; sports, entertainment, business, and recreation places, to be used all year round and to introduce environmentally friendly and community oriented design concepts.

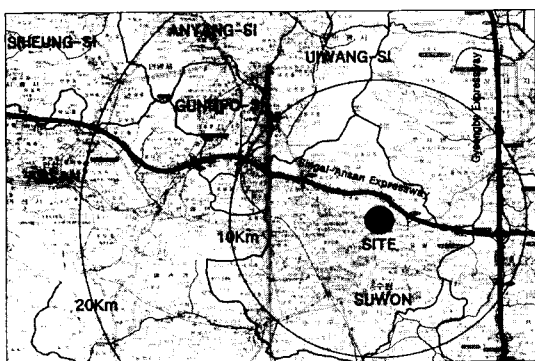


Figure 1. Site location



Figure 2. Site aerophoto view
Source: Suwon City, Year N/A

II. OBJECTIVES OF THE PLAN

The objectives of the plan are to prepare for the 2002 World Cup, to build soccer fields and attached facilities for the Samsung pro-soccer team, Blue Wings, to build sports facilities and community spaces for recreation, leisure, and cultural activities of the citizen.

III. SITE

1. Human Environment

The site is located in Uman-dong, Paldal-gu, Suwon City, Korea and its area is about 425,000m². Suwon City is located 25km south of Seoul and its population is about 1 million people (2002). Suwon is an old city planned by King Jeongjo of the Joseon dynasty in the 18century. It is a historically significant city which has several historical assets such as the Hwaseong Fortress which is registered as a UNESCO World Heritage area. It is also an agriculturally significant city where major agricultural institutions are gathered, and a high

tech city where the world famous Samsung Electric Company is located.

The site, which is surrounded by 25~50m wide roads, has very good access from major highways and the city center. About 20 elementary, middle and high schools and 2 universities are located around the site and their athletic fields are used as temporary parking spaces(4,000~5,000 spaces).

2. Natural Environment and Visual Landscape

The site is located on a relatively low hill and its elevation is from 57m to 125m. Areas of under 20% slope which are suitable for development are about 60% of the site and mostly face south.

Major vegetation is *Pinus rigida*, *Pinus densiflora*, *Quercus species*, *Robinia pseudo-acacia* etc. which are about 15~20 years old.

The north hill can be viewed from almost the entire site and its skyline will become the background of all sports facilities. A strong axis may be formed from the top of the hill to city center and the south-east cross street.

IV. PROGRAM

The program is developed considering site condition, local and regional demand, and development conditions between Suwon city(Suwon, 1994) and Samsung Company, etc.



Figure 3. Site view

1. Sports Facilities

1) Soccer Related Facilities : Soccer Stadium (43,000 seats), Subsidiary Field, Grass Field(2), Clay Field, Heliport.

2) Other Sports Facilities : Arena(10,000 seats), Indoor Ice rink, Outdoor Swimming Pool, Basketball court, Tennis court, Gate ball court, Volleyball court, Badminton court, Golf driving range, Sportrex(indoor swimming pool, health club etc.)

2. Convenience and Recreation Facilities

1) Convenience Facilities : Theme Retail, Theme Bar/Restaurant etc.

2) Leisure and Cultural Facilities : Community Center, Nature Interpretation, Natural Amphitheater, Theme Garden, Omni-theater, Soccer Museum etc.

3) Recreation Facilities : Nature Walks, Jogging/Fitness Trail, Viewing Areas

4) Others : Road, Parking(3,000 spaces), Pedestrian Walk, Open Space

V. BASIC CONCEPTS

1. Development Directions

1) Create a world class image of the Suwon sports complex.

2) Construct international standard sports facilities and infra structure for the 2002 World Cup.

3) Expand the educational and entertainment product mix at all sports facilities.

4) Preserve the major elements of the natural environment, engage the natural environment

and enhance the quality of the environment

5) Develop environmentally friendly and sustainable space.

6) Diversify and increase revenue through new sports and entertainment development.

7) Provide easy access and parking and a safe and convenient pedestrian walk system.

8) Connect to the existing urban structure as a landmark.

9) Symbolize the historical and cultural tradition of Suwon.

2. Design Concepts

1) Space connected visually to regional context

- Stadium as a landmark of the city should be connected to city structure visually.

- Stadium axis oriented toward the top of the mountain The north side of the stadium should be open toward the mountain with low seats maximizing the view to the top of the mountain (Figure 4, 12, 13).

2) Environmentally friendly space

- For an environmentally friendly design, green space, water, topography, soil, micro-climate etc. should be considered.

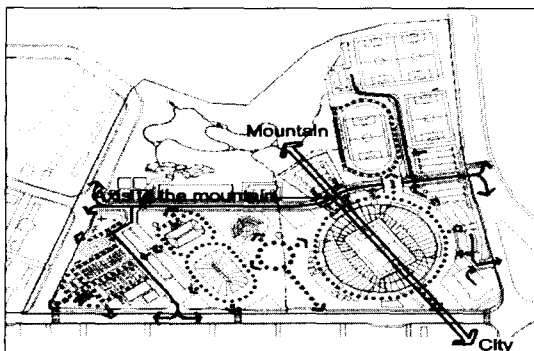


Figure 4. Stadium axis oriented toward the top of the mountain

3) Community centered cultural space

- Create community spaces which are related to commercial activities to increase the opportunities for community interaction.

- Build cultural spaces to exhibit environmental arts and event arts around the site.

4) Barrier-free pedestrian oriented space

- Build barrier free and pedestrian oriented spaces which are organized as a network.

5) Mixed-use space for year round utilization

- Mixed-Use Space for entertainment, business, and sports to be used even when there are no sporting events throughout the year (Figure 7).

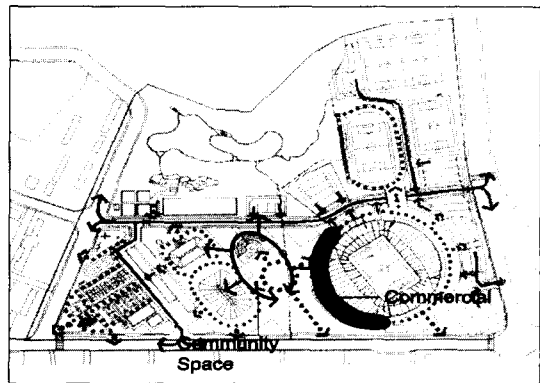


Figure 5. Community plaza and retail

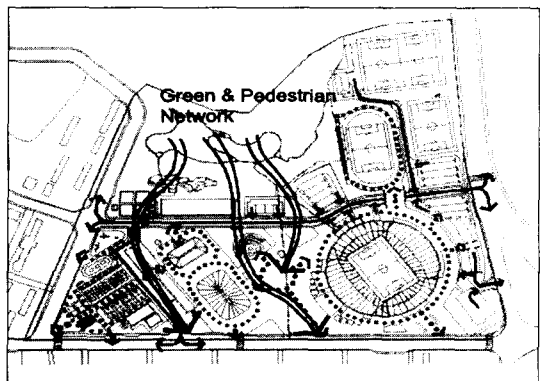


Figure 6. Green axis and pedestrian axis

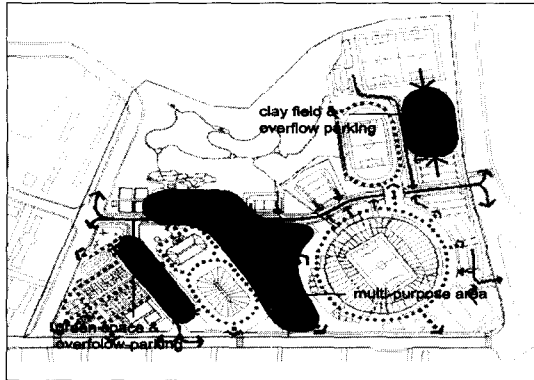


Figure 7. Mixed land use

6) A symbolic space

- Create a space symbolic of the historic city of Suwon.

V. ALTERNATIVE SPACE USE CONCEPTS

1. Criteria for Alternatives

- 1) Relationship to open space
- 2) Relationship to surrounding urban fabric/neighborhood
- 3) Grading
- 4) Access and Circulation
- 5) Parking
- 6) Project identity and visibility
- 7) Flexibility(economy and phasing)
- 8) Symbolism

2. Alternatives

1) Alternative I

Major sports buildings separated from one another linked by shared parking lots.

- Put a multi-purpose grass area in the center and arrange athletic facilities around it.

- The grass area is used as an overflow parking area.

2) Alternative II

To put a pedestrian green axis in the center and arrange athletic facilities around the green.

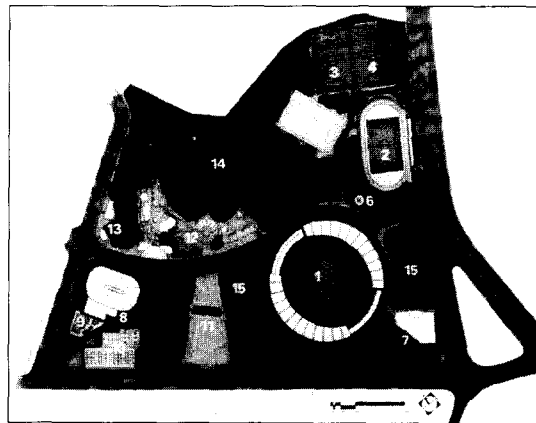


Figure 8. Alternative I plan

- Legend: 1: Soccer Stadium; 2: Auxiliary Field; 3: Practice Field 1; 4: Practice Field 2; 5: Clay Field; 6: Heliport; 7: Sportrex; 8: Arena /Sports Center; 9: Outdoor Swimming Pool; 10: Life Sports; 11: Multi-purpose Grass Area; 12: Children's Garden; 13: Playground; 14: Fitness Walk; 15: Parking

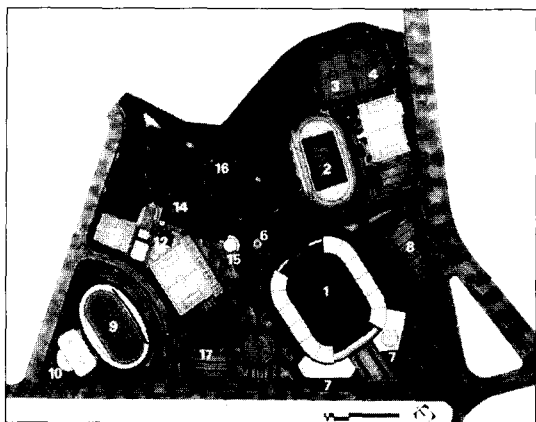


Figure 9. Alternative II plan

- Legend: 1: Soccer Stadium; 2: Auxiliary Field; 3: Practice Field 1; 4: Practice Field 2; 5: Clay Field; 6: Heliport; 7: Sportrex; 8: Parking Structure; 9: Cycling Stadium; 10: Indoor Ice Rink; 11: Clay Field; 12: Life Sports; 13: Outdoor Swimming Pool; 14: Grass Slope; 15: Amphitheater; 16: Fitness Walk; 17: Parking

- Construct a parking structure and underground parking.

3) Alternative III

To emphasize a central plaza and connect to athletic facilities.

- Build underground parking spaces.

The alternatives are assessed in terms of variety of facilities, connectivity between functions, economy, access, and relationship to nature. Alternative III is selected and some elements of the other alternatives are incorporated.

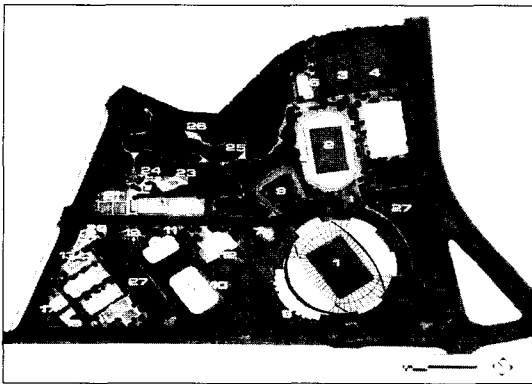


Figure 10. Alternative III Plan

Legend: 1: Soccer Stadium; 2: Auxiliary Field; 3: Practice Field 1; 4: Practice Field 2; 5: Clay Field; 6: Dormitory; 7: Heliport; 8: Sportrexx; 9: Golf Range; 10: Arena; 11: Indoor Ice Rink; 12: Amphitheater; 13: Roller Skate; 14: Outdoor Swimming Pool; 15: Tennis Court; 16: Basketball Court; 17: Volleyball Court; 18: Badminton Court; 19: Ssireum (Korean wrestling) Court; 20: Playground; 21: Gate Ball Court; 22: Korean Bow Court; 23: Children's Garden; 24: Nature Trail; 25: Fitness Walk; 26: View Point; 27: Parking



Figure 11. Perspective view

VII. THE MASTER PLAN

1. Land Use

1) The site consists of two different areas; the Samsung area and the Suwon City area. Samsung's area is organized into two primary zones; a soccer stadium zone and a training facility zone which are developed in the 1st stage. The facilities which are located on the east side of the site are a soccer stadium, an auxiliary field, a clay field, two grass fields, a heliport, a sportrexx, a retail mall, etc.

2) Suwon City's area is organized into a sports facilities zone and a park zone which are developed in the 2nd stage. The facilities which are mostly located on the west side of the site are basketball courts, badminton courts, gate ball courts, tennis courts, a swimming pool, Korean Bow Court, Ssireum(Korean wrestling) court, a playground, a children's garden, an arena, an ice rink, amphitheater, pedestrian plaza, fountain, green space, preservation green, fitness walk, view areas etc.

2. Open Space Plan

The goal of the open space plan is to create an environmentally friendly design. In order to achieve the goal, the following guidelines are recommended:

1) Green System

(1) Preserve existing green space and trees, create biotope, and establish networks among them.

(2) To maximize the utility of green spaces, communities must ensure that trails and

greenways form a continuous network of pathways for biking, running through the region.

(3) For planting in the site, introduce multi-layer ecological planting using existing community plant patterns such as *Quercus species*, *Pinus densiflora*, etc.

(4) Reduce cut and fill preserving existing topography and replant carefully disturbed areas using recent reclamation techniques.

(5) Arrange green space relating to beauty and amenity of city.

2) Water System

Establish a water cycle system using almost exclusively rain water on the site. For this, the next facilities can be recommended.

(1) Wetland

- Construct wetland in the low land area and use it as a nature interpretive space.

(2) Make detention area

- Make detention area along with open swales to increase infiltration of rain water.

- Consider introduction of underground rain water storage area in the future.

- Use grass fields and spaces between buildings for rain water detention area.

(3) Increase rain water infiltration

- Use permeable paving material such as brick, gravel, stone slab, etc. for road and parking spaces.

- Use permeable swales and trenches.

(4) Use xeric landscaping or water efficient landscaping to conserve water.

3) Soil

Preserve soil, minimize erosion and sedimentation, and plant trees in proper soil.

4) Topography

Reduce cut and fill thereby preserving existing topography.

5) Microclimate

Control height, location, direction, and arrangement of buildings and trees to bring fresh wind from mountain into the site and mitigate cold and hot wind.

3. Circulation and Parking

1) Access

- Make 3 entrances and exits for easy access from major 30~50m wide roads.

- Make 16~22m wide roads in the site for smooth circulation.

2) Separation between cars and pedestrians

- Separate cars and people to minimize post game congestion.

- Construct pedestrian deck between main stadium and auxiliary soccer field to separate cars and people.

- Make bicycle road and establish bicycle stands.

- Construct barrier-free street and facilities for handicap people.

3) Parking

- Make underground parking to use open space efficiently.

- Use grass field and clay field for overflow parking.

4. Special Area and Facility Plan

1) Stadium(43,000seats)

- Stadium axis oriented toward the top of the mountain. The north side of the stadium should

be open toward the mountain with low seats maximizing the view to the top of the mountain.

- Form of the stadium may symbolize Suwon and/or the Blue Wings of Samsung.

2) Sportrex/Retail/Convention

- In order to establish a year round attraction, mixed-use entertainment, business, and sports programs such as sport gallery/exhibition, sports related retail, bars and restaurants, Imax theater, virtual reality center, sport museum, theme garden, and convention are developed.



Figure 12. Suwon world cup stadium: after construction
source: <http://english.2002suwon.net/>

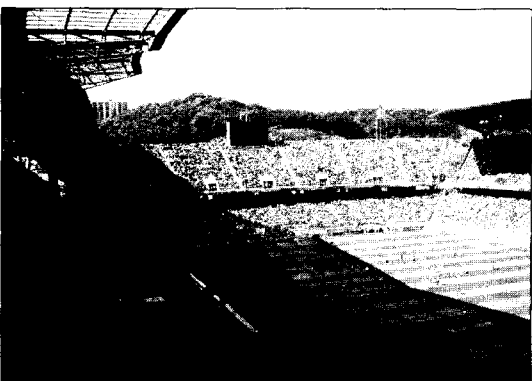


Figure 13. Stadium axis oriented toward the top of the mountain: after construction

3) Central Plaza

The Central Plaza which becomes a major axis between city and mountain is developed as a major green space on the site and as a community center which incorporates major sports and community facilities.

4) Nature Interpretive Center/Children's Garden

- Major green spaces are used as nature education spaces and nature interpretive programs are introduced.

- Themed gardens such as flower garden, ground cover exhibits, orchard, vegetable garden, community garden, and children's garden are developed.



Figure 14. The stadium commercial area for 4 season use: after construction

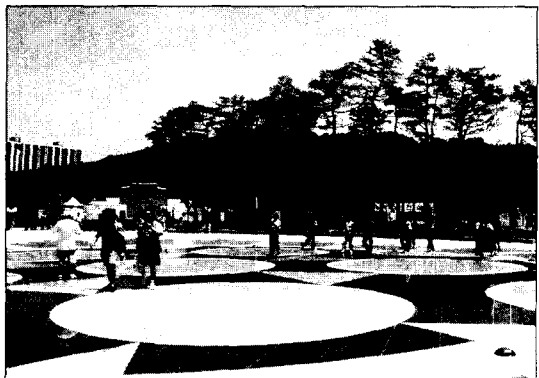


Figure 15. The central plaza for community activity: after construction



Figure 16. An environmental art exhibit: after construction

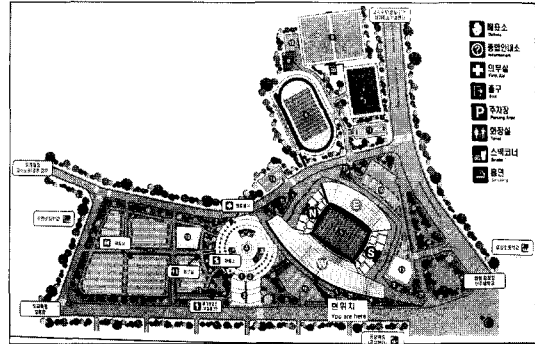


Figure 17. The 1st stage development area
Source: Suwon Worldcup Sign, 2002

5) Nature Amphitheater

- Located in the upper part of the central plaza incorporating exiting slope topography.
- It is used as a space for community gathering and various performances.

6) Sculpture Park

- All the spaces around the stadium are used as exhibit spaces for various art exhibits such as, environmental art, earth sculpture, flag art, etc.

VII. CONCLUSION

This plan was developed as a private and public venture to prepare for the 2002 World Cup, to build soccer fields and attached facilities for the Samsung pro-soccer team, Blue Wings, to build sports facilities and community spaces for recreation, leisure, and cultural activities for the citizens of Suwon City. Soccer stadium and attached facilities were constructed for the 2002 World Cup.

Because it was planned over a long term, the original plan has been changed. Because the 1st stage was developed by the private sector and concentrated on profit and efficiency, areas for public benefit such as green spaces and parks have been over looked. It is regretful that the proposal for environmentally friendly and

sustainable design aspects is partly abbreviated because of economic reasons. It should be revised for the future development.

Most athletic stadiums are used only for games, and their land use efficiency is thought to be usually very low. But this plan emphasized mix-use development including entertainment, sports, business, and recreation, which is a different approach from other athletic space development.

To be successful with this concept, it is necessary not only to develop proper facilities but also to maintain continuously, to manage facilities properly, to plan event programs, and to promote the site. Suwon City, which manages this site after construction should make every endeavor to achieve this goal.

REFERENCE

1. Suwon City(1994) Suwon the 2nd Sports Complex Master Plan and Design.
2. Suwon City(1996) Suwon the 2nd Sports Complex Concept and Master Plan.
3. <http://english.2002suwon.net/>

원 고 접 수 : 2002년 7월 26일
최종수정본 접수 : 2002년 8월 6일
3인익명 심사필