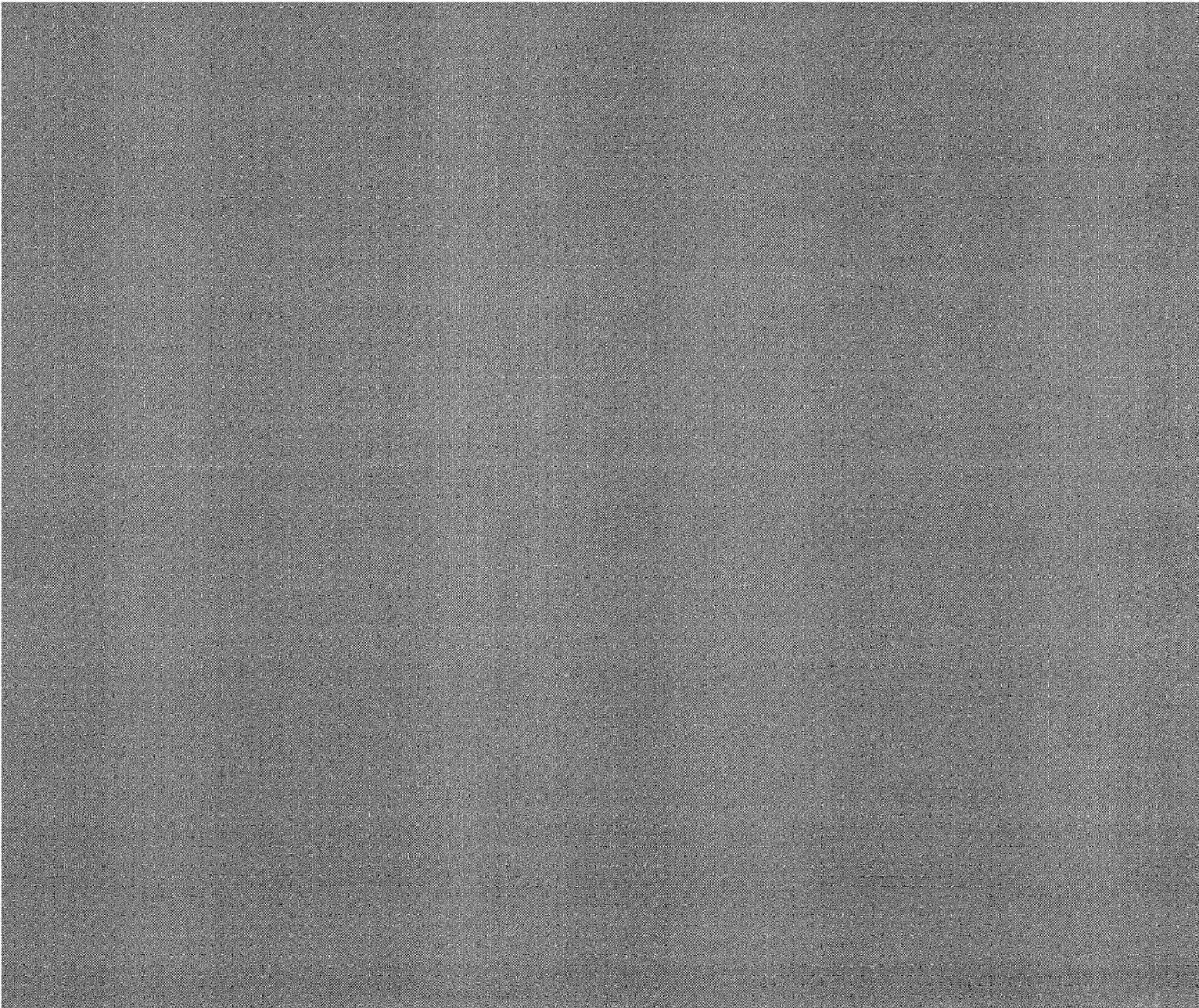


city of pasadena

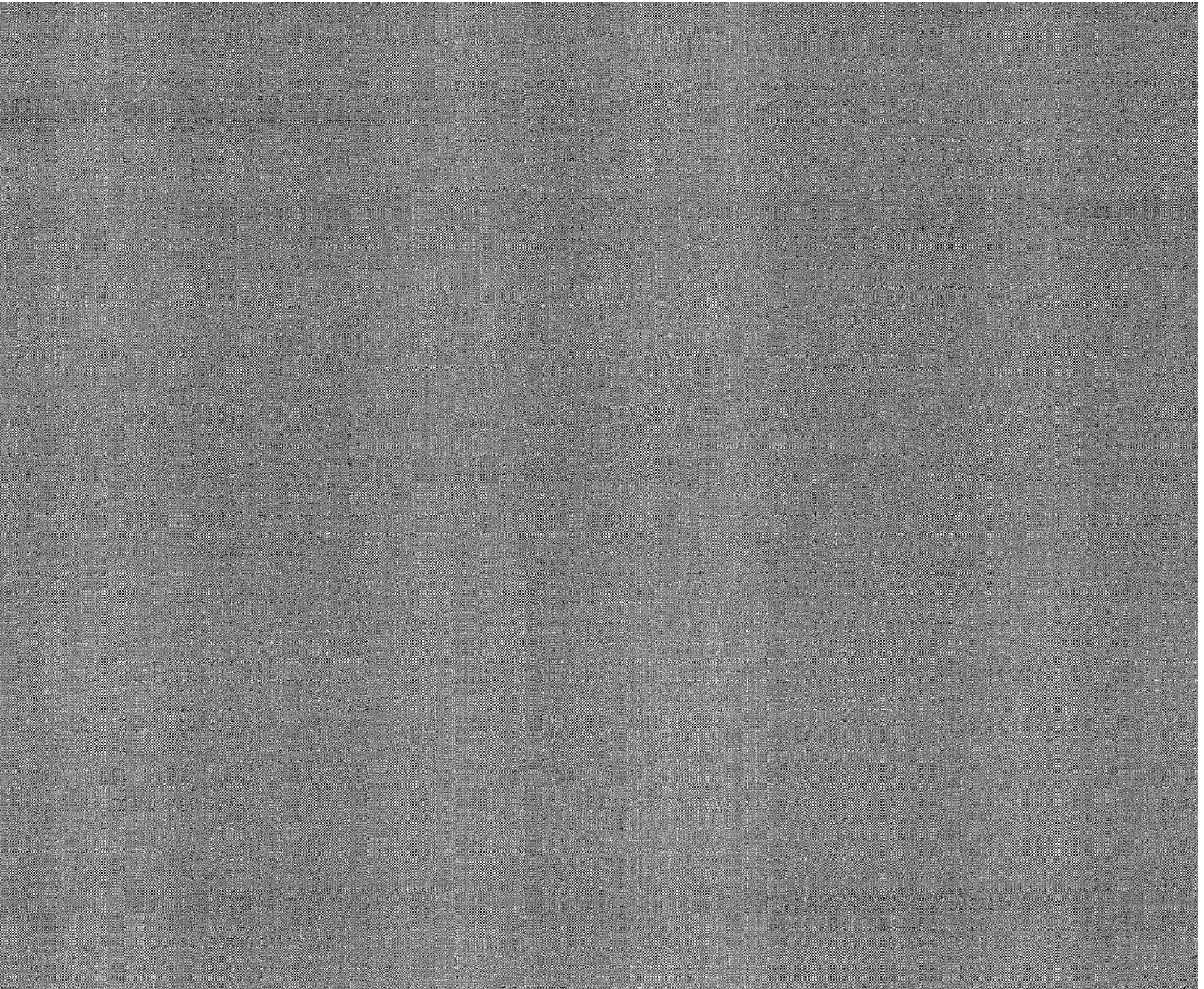
ROSEBOWL

master plan
DRAFT

hok sport
March 1, 2007



- 01 . executive summary
- 02 . master plan
 - 02a . history of the rose bowl
 - 02b . program
 - 02c . site overview
 - 02d . building plans
- 03 . cost estimate
- 04 . civil infrastructure
- 05 . code analysis
- 06 . mechanical electrical plumbing (MEP)
- 07 . historic preservation
- 08 . project team



executivesummary

The Rose Bowl Stadium, built in 1922, is one of the most well-known stadiums in the world and is the forerunner of the "College Bowl game". It has accommodated bowl games since 1923 and has an unmatched setting. Situated in the Arroyo Seco of Pasadena, California it is the home of the UCLA Bruins Football team and the Rose Bowl game. The stadium is integral to the City of Pasadena and the Tournament of Roses. Additionally, it is listed on the National Register of Historic Places as a National Historic Landmark.

The Rose Bowl has seen renovations over the years including a new press box facility in 1992, additional seating, new support facilities and most recently new team facilities in the south end zone scheduled to open in 2007. As with any stadium of this age, the time comes to address infrastructure challenges and modern standards for fans.

A master plan for the stadium has been developed to respond to aging issues and capture the best assets. The stadium accommodates 700,000 gross square feet and seats approximately 92,000. The existing challenges for the stadium include the following: poor circulation to/from the plaza level, inadequate access to/from the seating bowl, approximately 35% of the standard point of sales, approximately 60% of preferred restrooms, unorganized plaza level, lack of storage and operations, dated and limited premium amenity inventory, uncomfortable seating, dated infrastructure.

While the setting is tremendous there are many complexities to consider. Key design challenges are to balance program needs, Tournament of Roses requirements, UCLA Football requirements, site constraints and budget. The following is a summary of issues to consider:

- Respond to the requirements of the National Register of Historic Places
- Circulation – concourse and seating bowl
- Adjacency to the Golf Course
- Ceremonial front door image on the South side
- Program demand
- Parking requirements – minimize loss
- Respect the surrounding neighborhoods and connect to the City of Pasadena
- Definition of public open space
- Landscape Design
- Elliptical Bowl Configuration
- Seating Capacity requirements (Tournament of Roses and UCLA Football)
- Seat Comfort
- Modern amenities
- Improved exiting from the seating bowl
- UCLA branding
- National security risk

Summary of Process

The master plan process involved user groups and representatives from the Rose Bowl Operating Company (RBOC), UCLA, City of Pasadena and the Tournament of Roses (the committee). Additionally, the public was invited to hear about the progress of the study and the findings. The design team also met with and will continue to meet with organizations interested with historic preservation. A traffic study was not part of this master plan.

Step 1 – Kick-Off Meeting / Goal Setting

Goals were established to determine the direction for the master plan.

Step 2 – Data Gathering

Tour the Rose Bowl and gather information from the public.

Step 3 – Market Study

A market study was conducted to determine the demand for premium amenities for the Rose Bowl Stadium. The market study tested suites, outdoor club seats, indoor club seats and Loge Boxes. The market study results are separate from this book.

Step 4 – Programming

Interviewed user groups from the RBOC, UCLA, Tournament of Roses and the City of Pasadena. A conceptual program listing space requirements was created.

Step 5 – Conceptual Design / Cost Estimating / Phasing

Alternative solutions were proposed to meet the program needs and goals of the master plan. Cost estimates and potential priority projects were developed.

Step 6 – Final Study

Information gathered during the process and the draft final approach is compiled.

Goals

Goals and objectives were established at the start of the study to provide direction to the design team. The goals included the following:

- Capitalize on the History and Setting of the Rose Bowl
- Improve public safety
- Develop a revenue stream
- Provide modern amenities for an enhanced fan experience
- Maintain the integrity of the venue
- Maintain the stadium on the National Register of Historic Places
- Connect to Pasadena
- Be good stewards of the stadium

Additional design goals determined during the study included the following items:

- Improve the leg room and seat width of the stadium
- Minimize seat loss
- Improve entering and exiting the seating bowl
- Unify the concessions and restrooms on the plaza level
- Display the history of the Rose Bowl and the teams/coaches that have played there
- Respect the setting and neighborhoods
- Improve exterior lighting while reducing light spillage
- Allow users to use and connect to the stadium on non-game days

Five main project objectives were established from these goals.

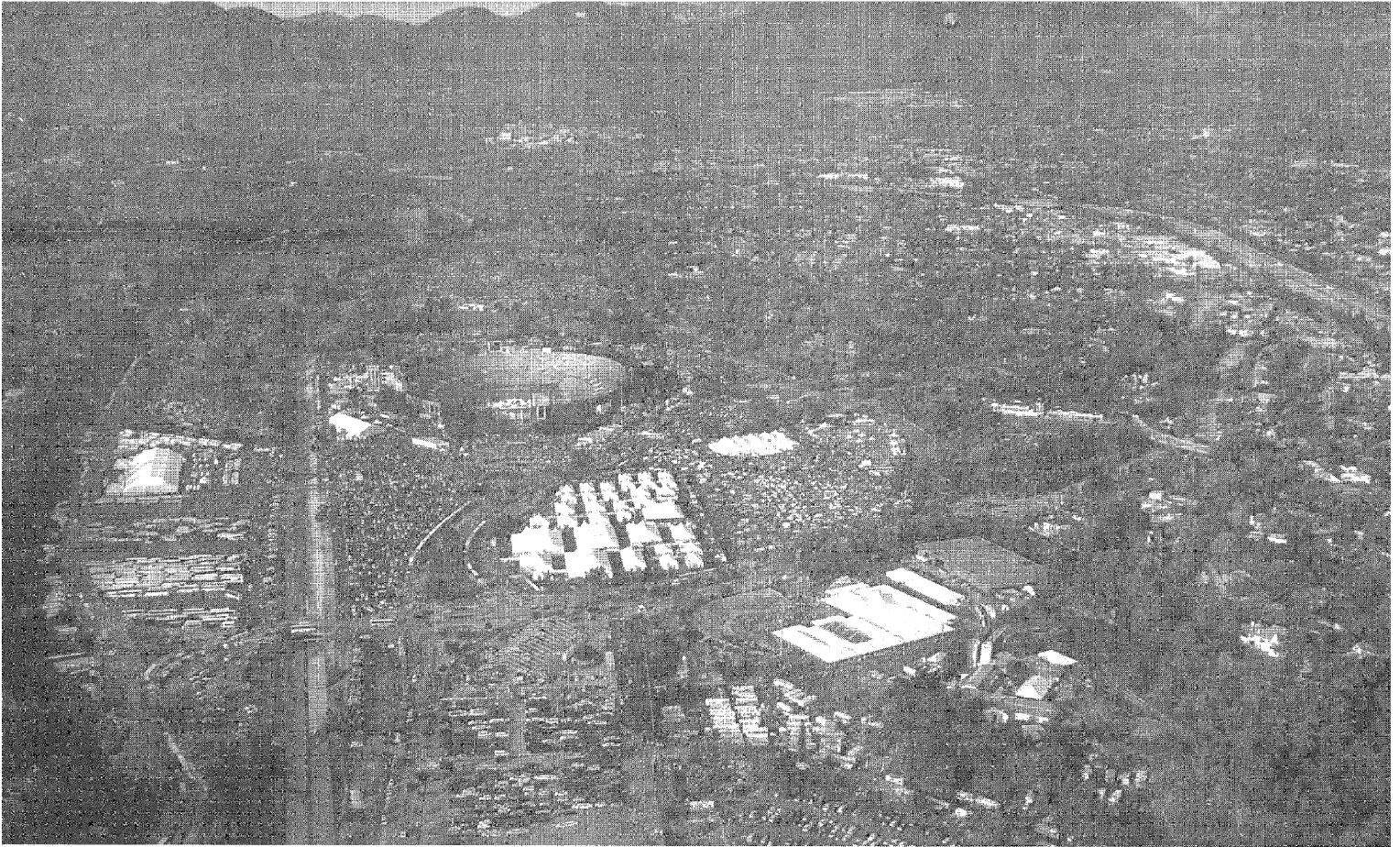
1. Public safety improvement
2. Enhance fan experience
3. Maintain historic landmark status
4. Enhance facility operations
5. Create a revenue stream for long term reinvestment into the stadium

The Master Plan

The Rose Bowl Master Plan is one of the most complex solutions of any public sports facility. The stadium is located in one of the most dramatic settings in the country and has a high level of publicity surrounding it and what it represents. There are three main user groups (City of Pasadena, Tournament of Roses, UCLA) that all have slightly different goals and objectives to be balanced. It is uncontested that the stadium should be preserved far into the future and updated to serve not only the community but the country.

The stadium master plan responds to the goals of the committee. It is a big picture overview of how to approach improvements to the stadium that can be divided into phases as funding becomes available. A summary of the potential improvements addressed include the following:

- Maintains the integrity of the bowl
- Enhances the existing landscape features
- Upgrades the major infrastructure of the stadium including electrical capacities and mechanical equipment
- Adds a variety of premium amenities including outdoor club seats, loge boxes and suites
- Provides a club for game day activities and year round events



projectobjectives

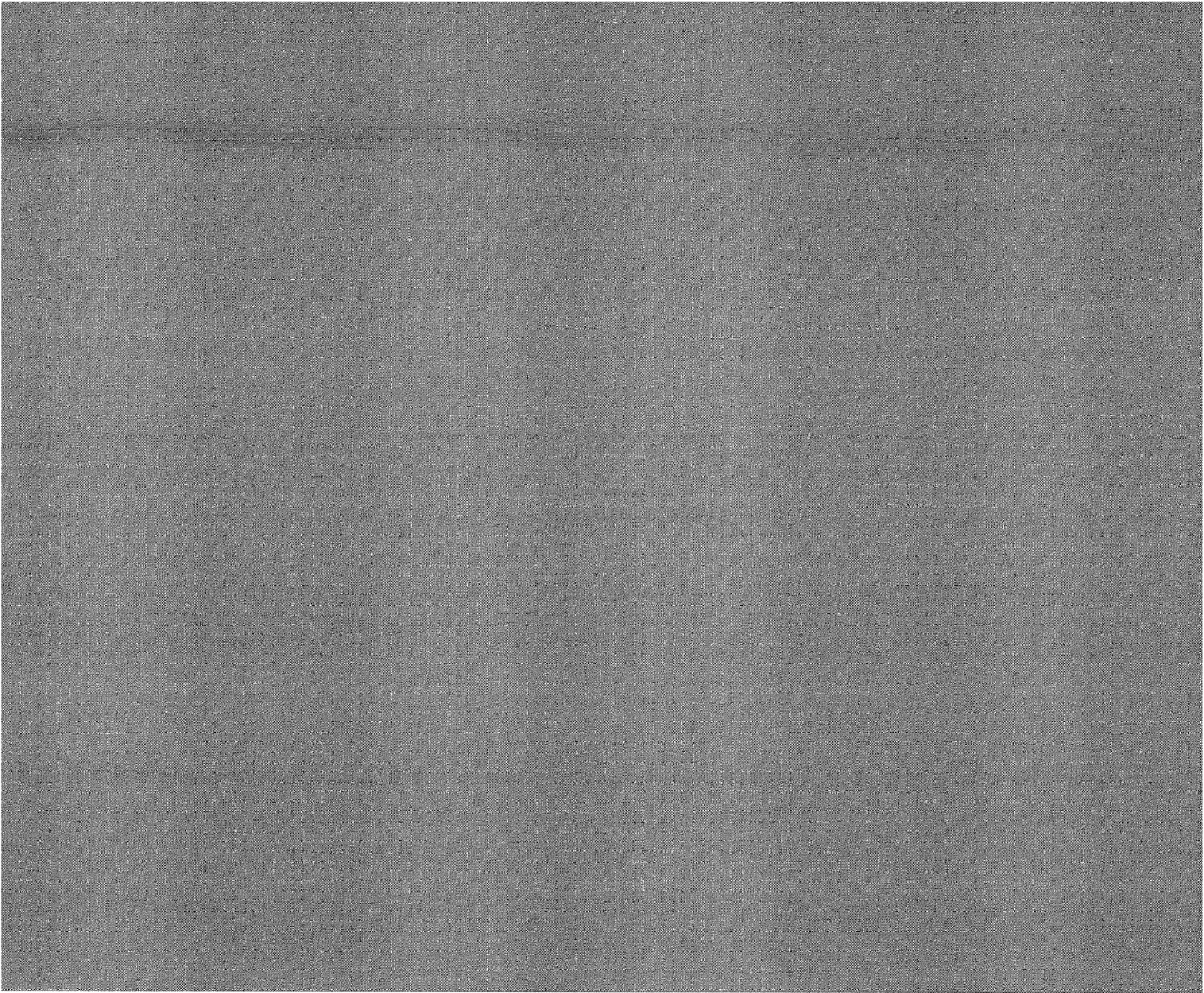
- 1 . public safety improvement
- 2 . enhance fan experience
- 3 . maintain historic landmark status
- 4 . enhance facility operations
- 5 . create revenue stream for long term reinvestment in stadium

- Replaces the pressbox
- Increases the number of restrooms and concessions serving the fans
- Expands the plaza level concourse
- Provides a horizon level concourse at the back of the bowl for improved circulation
- Increases the number of aisles
- Replaces the current seats
- Builds a museum to showcase past Rose Bowl games/players/coaches
- Provides consistent graphics throughout the stadium
- Replaces the scoreboards and videoboard with state of the art technology
- Adds a ribbon board on the press / suite fascia
- Increases support area for storage and operations
- Celebrates the home of UCLA Bruins Football

Summary

The Rose Bowl Master Plan provides a roadmap for the City that addresses the stadium's needs and programmatic requirements to preserve the stadium far into the future. The Rose Bowl is a significant part of Pasadena and the community. The Rose Bowl Game provides an opportunity for a common denominator to people of all ages and backgrounds. The stadium and environment evokes emotion and passion, creates memories, recalls past experiences, provides experiences with friends and family and provides opportunities for student athletes to excel. The stadium is the proud home for the UCLA Bruins.

The master plan encapsulates the long standing history and traditions, the user groups needs, the Arroyo Seco Master Plan and vision of the City of Pasadena, Tournament of Roses and UCLA. It is a roadmap that will assist the City in providing the best atmosphere for success in the future.



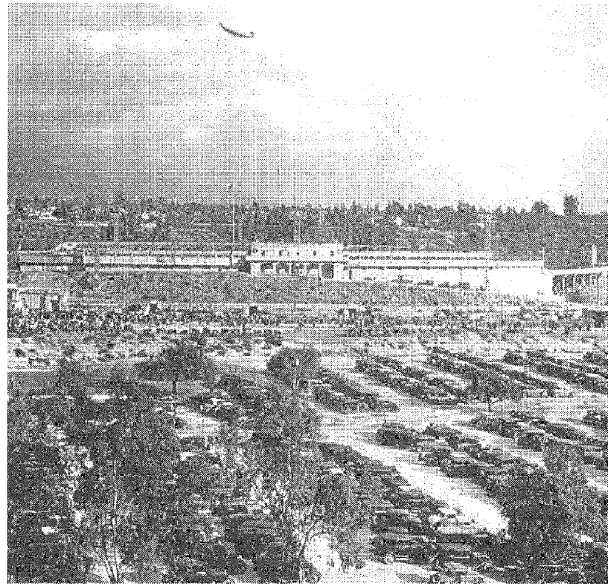
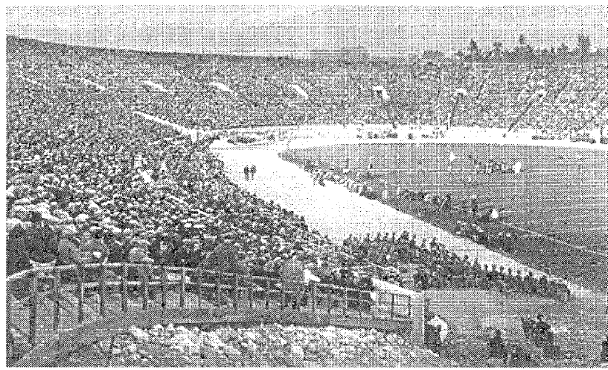
02 master plan

02a . history of the rose bowl

02b . program

02c . site overview

02d . building plans



history of the **rose bowl**

02a

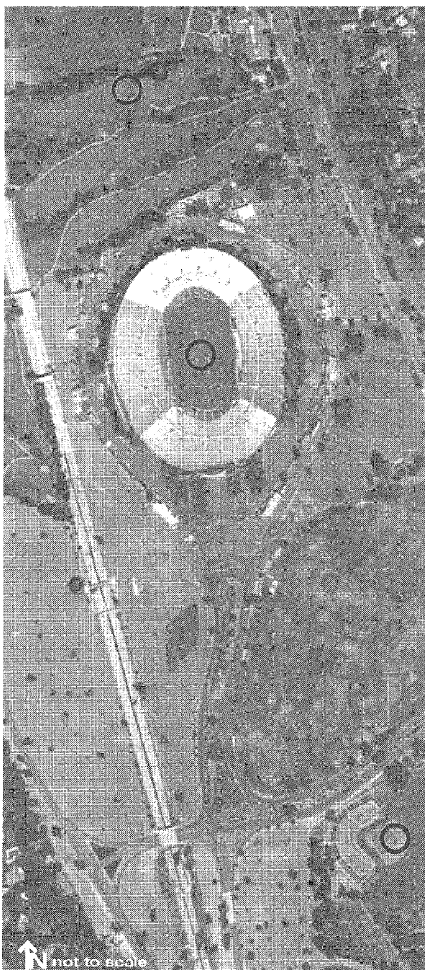
The Rose Bowl, completed in 1922, was designed by Myron Hunt, a distinguished local architect. The original design planned for a dramatic neoclassical façade of continuous arches; however cost constraints demanded that Hunt rethink the idea. In place of the colonnade Hunt used locally harvested Arroyo stone as foundation walls as well as retaining walls which still ring the stadium today. The bleachers were constructed from recycled lumber from Tournament Park bleachers, Hunt was sure that a more permanent solution for the stadium would someday happen. When first built, the south end zone was open and the bowl was in the shape of a horseshoe and included a running track. The capacity was only 57,000.

By the mid 1920's football at the Rose Bowl was increasingly popular and changes were made. The south end zone was closed and four new tunnels were added. The capacity was increased to 76,000, an increase of some 19,000 seats. During the same period field lighting was added. All this was completed by 1929.

1930 saw the replacement of the wood bleachers with cast in place concrete structures as well as additional rows at the back of the seating bowl, increasing capacity to 80,000. It was in 1930 that the first permanent press box was built on the west sideline.

1932 brought the Olympics to Los Angeles and the Rose Bowl hosted several cycling events. The Olympics came back to L.A. in 1984 and the Rose Bowl was host to Olympic soccer.

During the late 1930's the Rose Bowl added another 4,000 seats and through the WPA the Administration Building was built.



- 1 . rose bowl
- 2 . brookside golf course
- 3 . 210 freeway
- 4 . 134 freeway
- 5 . brookside park

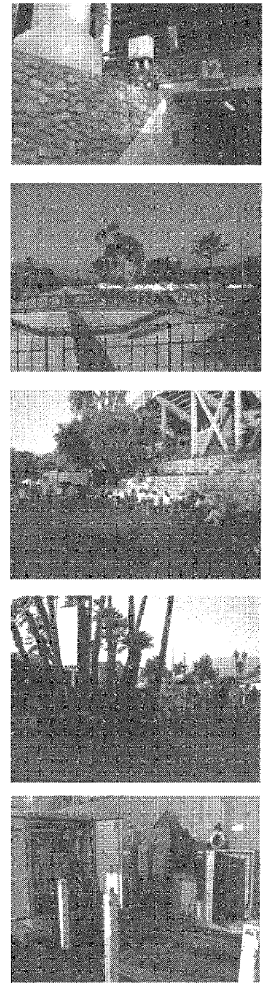
In 1950 the south end zone received it's most famous trademark, the neon "Rose Bowl" sign. It was in the same year that seating rows were added to the back rim of the bowl, making it a single elevation and pure ellipse for the first time in its history. This also increased the total seating capacity to nearly 100,000.

In 1961 the original press box, in disrepair, was taken down. A new 285 foot long two story press building was erected in its place. This building served until 1992 when plans were drawn up to re-build a new press building in anticipation of accommodating the 1994 World Cup Soccer. That press box stands today much as it did when it was completed.

The Rose Bowl has had a long history of flexibility and change based on need. It continues to host one of the premier football games of the year just as it has done every year since its completion 85 years ago. It boasts many firsts for collage football and sporting events. It was the site of the first transcontinental radio broadcast in 1927, the first college football game to be telecast nationally in 1952, the first college football game to be telecast nationally in color occurred in 1962. In 1968 the first football game to be broadcast via satellite to Europe was played at the Rose Bowl.

The Rose Bowl was listed on the National Register of Historic Places as a National Historic Landmark by the Secretary of the Interior in 1987 as one of the ten most significant properties associated with the history of recreation and sports in the United States.

Information for this section came from:
 Historic Structure Report and Preservation Plan for the Rose Bowl
 Prepared for the Rose Bowl Operating Company, October 1997
 Prepared by Historic Resources Group.



the program

02b

The preliminary program for the master plan was developed through data collection and research, meeting with user groups and industry expertise. HOK Sport collected as much existing information as possible about the Rose Bowl and how it is used. Additionally, HOK Sport attended a UCLA game and observed how the stadium functioned. User groups shared their experience with the Rose Bowl including what works well and what could be improved. Example user group meetings included groups such as security, first aid, concessions, ticketing, operations, and team facilities. Lastly, HOK Sport used industry expertise and comparable collegiate facility knowledge to develop the program.

The following program space summary outlines required spaces and their associated square footages.

Spectator Facilities

spectator seating

	Units	NSF	Subtotal	Comments
General Seating	86000	5.5	473,000	Seating type to be determined
Outdoor Club Seats	2500	6.5	16,250	2,000 to 2,500 per the market survey
Indoor Club Seats (optional)	150	8.0	1,200	
Loge Boxes	200	22.5	4,500	50 Loge Boxes with 4 seats each
Suite Seating	640	8.0	5,120	640 seats total including bar stools
Athletic Director Suite Seating	16	8.0	128	(assumes average 12 fixed; 4 bar stool)
Executive Suites Seating (2)	96	8.0	768	36 fixed; 12 barstools in each
Conference Commissioners Seating (2)	32	8.0	256	12 fixed; 4 barstools in each
Tournament of Roses President Seating	16	8.0	128	
Bowl Commissioners	32	8.0	256	
Grand Marshall Suite	16	8.0	128	
Wheelchair seating	inc.		inc.	included in the overall seat count
Subtotal Seating	89698		501,734	

premium amenities

Premium Lobby	4	450	1,800	
Suites	40	450	18,000	40 revenue generating suites
Athletic Director's Suite	1	450	450	
Executive Suites (University President's)	2	1,400	2,800	includes restrooms inside of suite (50 seats total in each)
Conference Commissioners	2	450	900	** May be in divisible space of indoor club
Tournament of Roses President	1	450	450	** May be in divisible space of indoor club
Bowl Commissioners	1	900	900	** May be in divisible space of indoor club
Grand Marshall Suite	1	450	450	** May be in divisible space of indoor club
Suite Restrooms - Men	15	55	825	5 w.c. @ 1:75; 10 ur @ 1:40; 4 lavs @ 1:100
Suite Restrooms - Women	15	60	960	16 w.c. @ 1:30; 4 lavs @ 1:100
Suite Storage	2	250	500	
Suite Pantry	2	450	900	
Suite Family Toilet	2	80	160	
Suite Janitor's Closet	2	50	100	
Stadium Club	2500	10	25,000	serves outdoor club
Stadium Club Restrooms - Men	39	50	1,950	13 w.c. @ 1:100; 26 ur @ 1:50; 13 lavs @ 1:100
Stadium Club Restrooms - Women	30	55	1,650	30 w.c. @ 1:40; 13 lavs @ 1:100
Stadium Club Storage	1	500	500	
Stadium Club Concessions	20	100	2,000	1 pos per 125 patrons
Stadium Club Coats	1	500	500	
Stadium Club Family Toilet	2	80	160	
Stadium Club Janitor's Closet	2	50	100	
Stadium Club First Aid	1	150	150	
Loge Club	200	15	3,000	
Loge Club Restrooms - Men	12	55	660	4 w.c.; 8 ur; 6 lavs
Loge Club Restrooms - Women	8	60	480	8 w.c.; 6 lavs
Loge Club Storage	1	350	350	
Loge Club Buffet / Pantry	1	500	500	
Loge Club Coats	1	150	150	
Loge Club Family Toilet	2	80	160	
Loge Club Janitor's Closet	2	50	100	
Loge Club First Aid	1	150	150	
Subtotal Premium Amenities			64,955	

Spectator Facilities

	Units	NSF	Subtotal	Comments
Public Restrooms - Men (based on 44,000)	514	50	25,700	148 w.c. (1:300) + 366 urinals (1:120) Existing: 170% w.o.+ 38% of urinals
Public Restrooms - Women (based on 44,000)	733	55	40,315	733 w.c. (1:60) Existing: 57% w.c.
Public Restrooms - Unisex	8	80	640	Distributed around the stadium
First Aid	1	200	200	Assumes keeping existing First Aid plus new one
Ticketing - Will Call Windows	16	45	720	16 windows
Ticketing - Movable 2 Window Booths	7	100	700	7 - 2 window movable booths
Ticketing - Players guests	16	45	720	2 - 8 window booths
Ticketing - Office	1	150	150	
Ticketing - Customer Service Conf Room	1	150	150	
Ticketing - Money counting Room	1	150	150	
Ticketing - Restroom	1	80	80	
Ticketing - Break Room	1	150	150	
Hall of Fame / Small Novelty Area	1	6,000	6,000	Additionally display throughout the concourse and stadium
Hall of Fame Office	1	150	150	
Hall of Fame / Novelty Storage	1	400	400	
Novelty Stands	80	40	3,200	# = points of sale. permanent stands distributed throughout the stadium. Must be secure.
Novelty Storage	1	1,000	1,000	
Subtotal Spectator Facilities			80,425	

Food+Retail Facilities

food service

Offices	4	120	480	
Money Counting Room	1	150	150	
Vault Room	1	40	40	
Main Commissary (dry and refrigerated goods)	1	3,500	5,000	SF to be confirmed with Food Service Consultant when use is determined
Kitchen	1	3,000	3,500	SF to be confirmed with Food Service Consultant when use is determined
Food Service Custodial Room	1	500	3,500	
Concession Storage	1	800	2,000	
Vendors Commissaries	430	10	4,300	one vendor per 200 spectators
Concessions	287	100	28,700	permanent concessions (1,300) plus portables based on 86,000
Subtotal Food Service			47,670	

Team Facilities

N/A			0	
Subtotal Team Facilities / Support			0	

Press Facilities

Press Lobby	2	300	600	
Writing Press (open)	260	20	5,200	
Radio Booths	5	240	1,200	12 LF each
Network Television Booth	1	400	400	20 LF
Extra Television Booth	2	300	600	15 LF each
Time / Clock Operations Booth	1	150	150	8 LF
Stats Booth	1	400	400	10 total; 6 front; 15 LF; adjacent to PA Announcer
PA Announcer Booth	1	200	200	4 across; 10 LF
Sound / Video Booth	1	200	200	4 across; 6 total; 10 LF
Home Coaches Booth	1	300	300	15 LF
Visiting Coaches Booth	1	300	300	15 LF
Instant Replay Booth	1	200	200	4 across; 10 LF
Command Post	1	900	900	Police, Fire & Medical
Visiting AD's Booth	1	300	300	15 LF
Flexible Booths	2	300	600	15 LF
Photo / Camera Deck	1	500	500	6-8 cameras, 5' o.c. per camera. 30-40 LF; covered and 3 wall enclosure
Media Work Room	1	350	350	rollup counter for media
Lounge / Dining	75	12.5	938	
Pantry	1	300	300	
Men's Restroom	2	300	600	

	Units	NSF	Subtotal	Comments
Women's Restroom	2	300	600	
Storage	2	150	300	
Field Photographers Room	1	200	200	
Subtotal Press Facilities			14,738	

OperationsSupport

Cardboard Bailer and Recycling	1	1,200	1,200	
Trash Compactors	1	1,000	1,000	
Loading Dock	1	1,500	1,500	3 docks
Loading Dock Security	1	150	150	
Distributed Janitors Closets	10	50	500	
Central Custodial Room	1	750	750	
Tournament of Roses Offices	1	1,000	1,000	
Tournament of Roses Storage	1	1,500	1,500	
Field Equipment Storage	1	3,000	3,000	includes benches, practice equipment, etc.
Game Management Storage	1	750	750	
General Building Storage	1	5,000	5,000	
Tarp Storage	1	450	450	
Computer Storage	1	200	200	
Marketing Storage	1	1,000	1,000	
Maintenance Shop	1	2,000	2,000	
Paint Shop	1	1,000	1,000	long enough for 20' long boards, locate away from public areas, provide ventilation
Paint Storage	1	500	500	
Utility Workroom / Office	1	300	300	
Groundskeepers Work Room	1	200	200	
Staff lockers	15	15	225	1 room for 15
Break Room	1	200	200	
Security - Communications Room	1	100	100	
Security - Processing Center	2	120	240	provide processing center on each side of the stadium
Security - Toilet	2	70	140	provide 1 toilet with each pair of holding cells
Mechanical Room	3	1,500	4,500	To be confirmed with MEP consultant
Main Electrical Room	1	1,000	1,000	To be confirmed with MEP consultant
Emergency Generator Room	2	600	1,200	To be confirmed with MEP consultant
Electrical Closets	10	150	1,500	To be confirmed with MEP consultant
Main Tele / Data Rooms	2	400	800	To be confirmed with MEP consultant
Tele / Data Closets	10	100	1,000	To be confirmed with MEP consultant
Fire Pump	1	450	450	To be confirmed with MEP consultant
Elevator Equipment Rooms	8	300	2,400	
Subtotal Operations / Support			17,805	

Circulation

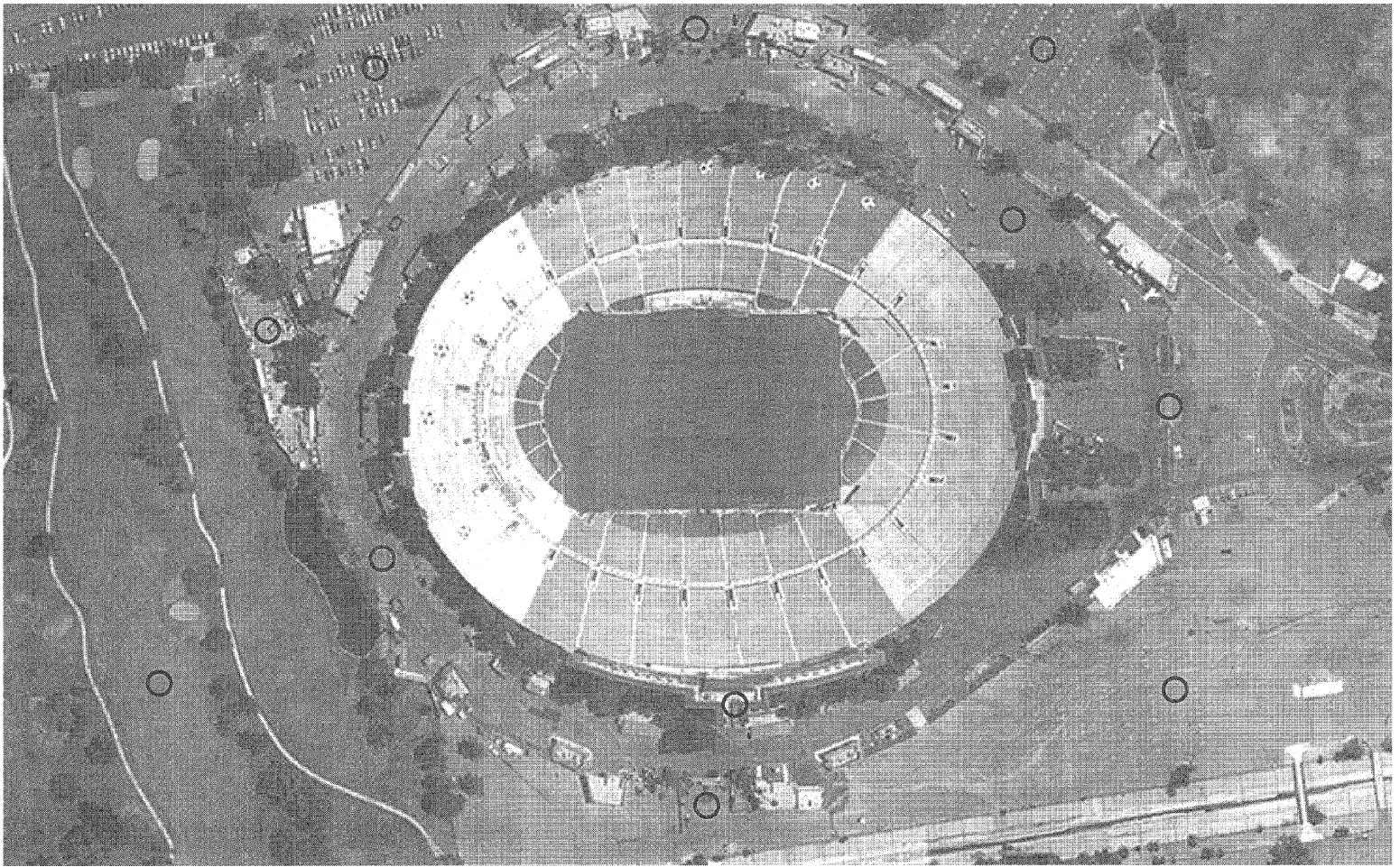
Concourse	86000	3.5	301,000	should be increased if portables will continue to be heavily used
Stairs			0	as required by code
Public Elevators	6	150	900	
Service Elevators	2	200	400	1 per side of the stadium
Subtotal Circulation			302,300	

OtherItems

New Sound System			n/a	
Install Sound System in Concourses			n/a	
New Scoreboard			n/a	
New Videoboard			n/a	
Videoboard Studio	1	600	600	
Subtotal Other Items			600	

SummaryRose Bowl Stadium

Subtotal Net Area			1,033,142	
Net to gross factor 25%			57,277	Does not include grossing factor for seating
TOTAL Gross Area Rose Bowl Stadium			1,090,418	



siteoverview

EXISTING SITE

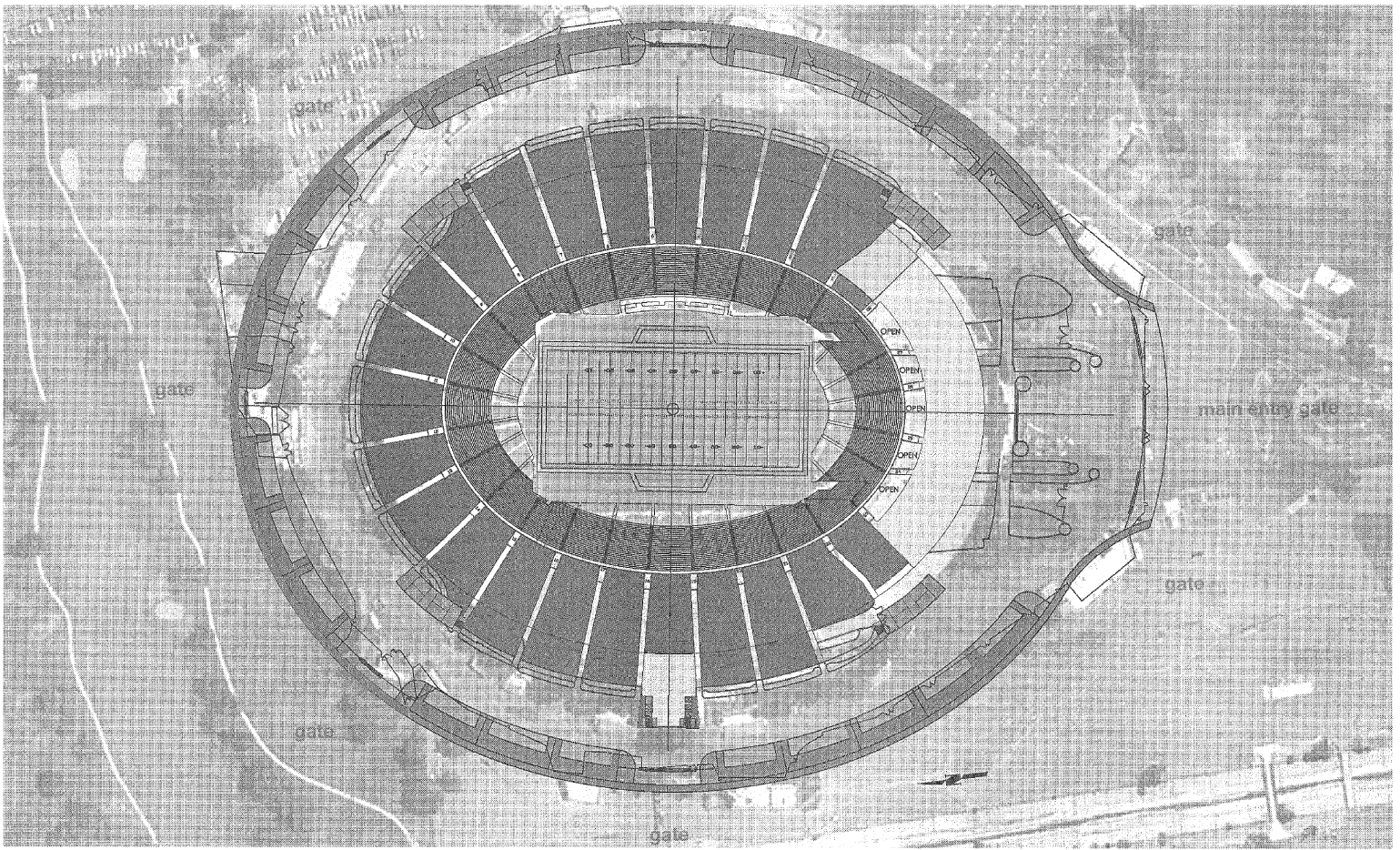
- 1 . entry gates
- 2 . storage yard
- 3 . press/suite
- 4 . plaza level
- 5 . brookside golf course
- 6 . parking

02c

The setting of the Rose Bowl, Pasadena's Arroyo Seco, is dramatic and elemental. Prior to the alterations of man, native plantings of California Sycamores, Live Oaks, and chaparral dotted the narrow pristine draw. A stream along the canyon floor flowed amidst a rugged array of what has come to be known locally as "Arroyo Stone" boulders... a salt and pepper colored granite boulder often smoothed by years of wear from journeys down from the higher vestiges of the canyon.

While the Rose Bowl and surrounding development necessarily eroded some of the natural qualities of the Arroyo, the early designers sensitively used Arroyo Stone in the building of the landscape walls that form the base of the bowl's exterior embankment. Sycamores and Oaks populated the surrounding landscape and have been supplemented by a variety of introduced species, most notably Eucalyptus (used extensively around the bowl exterior) as well as Mexican Fan Palms which articulate the Southern Entry.

The landscape of the bowl is envisioned to marry the best of the native and introduced plant species with the new concourse layout and circulation. With the removal of the various structures adjacent to the arroyo stone walls, the embankment will be returned to full view. Lower-growing native species will cover the slopes with a strong nod to the hillsides of the arroyo. Trees at the outer edges of the concourse will be chosen for height to create the strong historic effect of a bowl contained by landscape. And, at the entry, historic palms will be re-used to carry the traditions of yesterday forward into the future.



MASTER PLAN

project priorities

- . horizon level / aisles / circulation
- . west sideline / hall of fame
- . plaza level renovation
- . new seating
- . video board / ribbon board

The following five components of the master plan have been identified as high priority. They are the following:

Horizon Level, New Aisles and Vertical Circulation. A new concourse or walkway will be added at the back of the upper bowl along with vertical circulation. New aisles will be added from the top of the stadium down to the tunnels. Adding aisles will eliminate approximately 100 seats per aisle, but will significantly improve circulation for a majority of the seating bowl.

West Sideline Addition and a Hall of Fame. This includes new premium amenities, a new press box and a potential hall of fame location.

Plaza Level Renovation and Infrastructure upgrades. This includes widening the concourse, increasing restrooms, increasing concessions, new gates and fencing, concourse lighting, underground MEP upgrades and service, operational support areas, new ticketing at all gates, additional landscaping and reconstruction of existing Arroyo stone terraced walls around the base of the stadium.

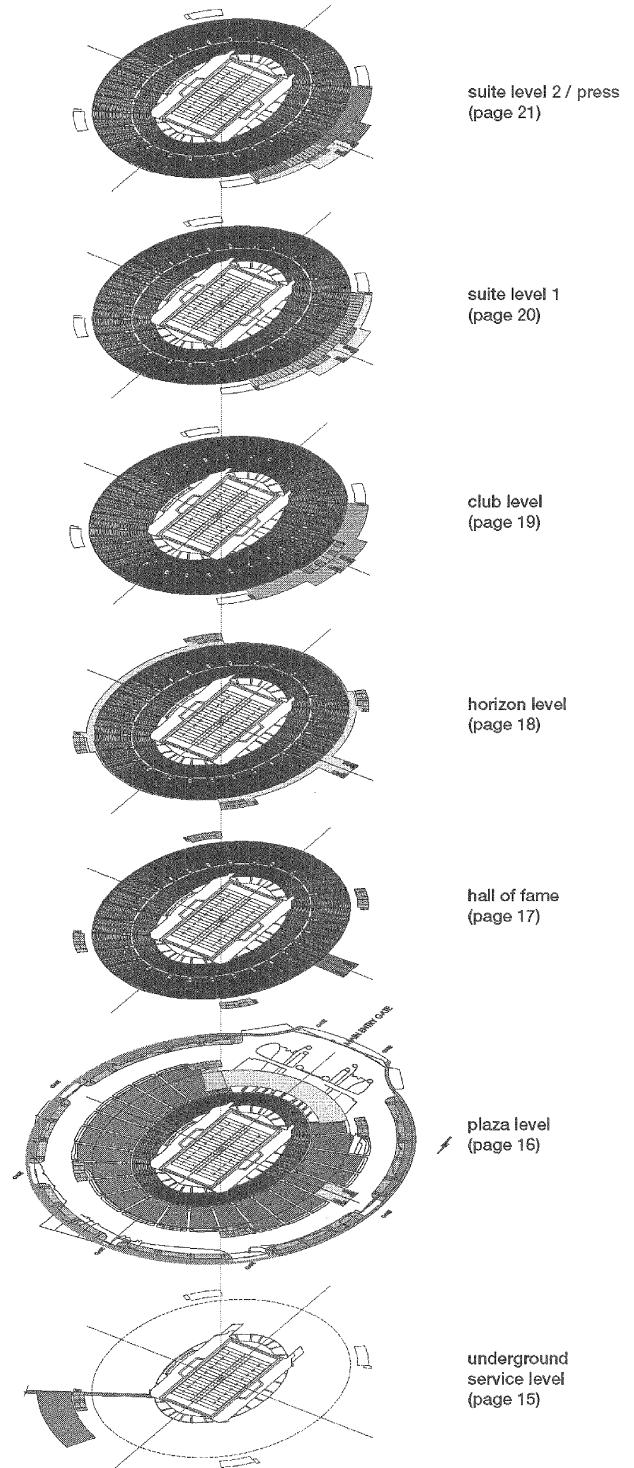
Replace All Seats. The chairback seats and bench seating will be replaced with a 1:1 ratio (a different ratio can be installed once the needs are finalized). The removal of lettered row seating at the field in order to restore the configuration back to its original form.

New Video Board and Ribbon Board. Replace the video board and add a ribbon board along the fascia of the press and suite facility.

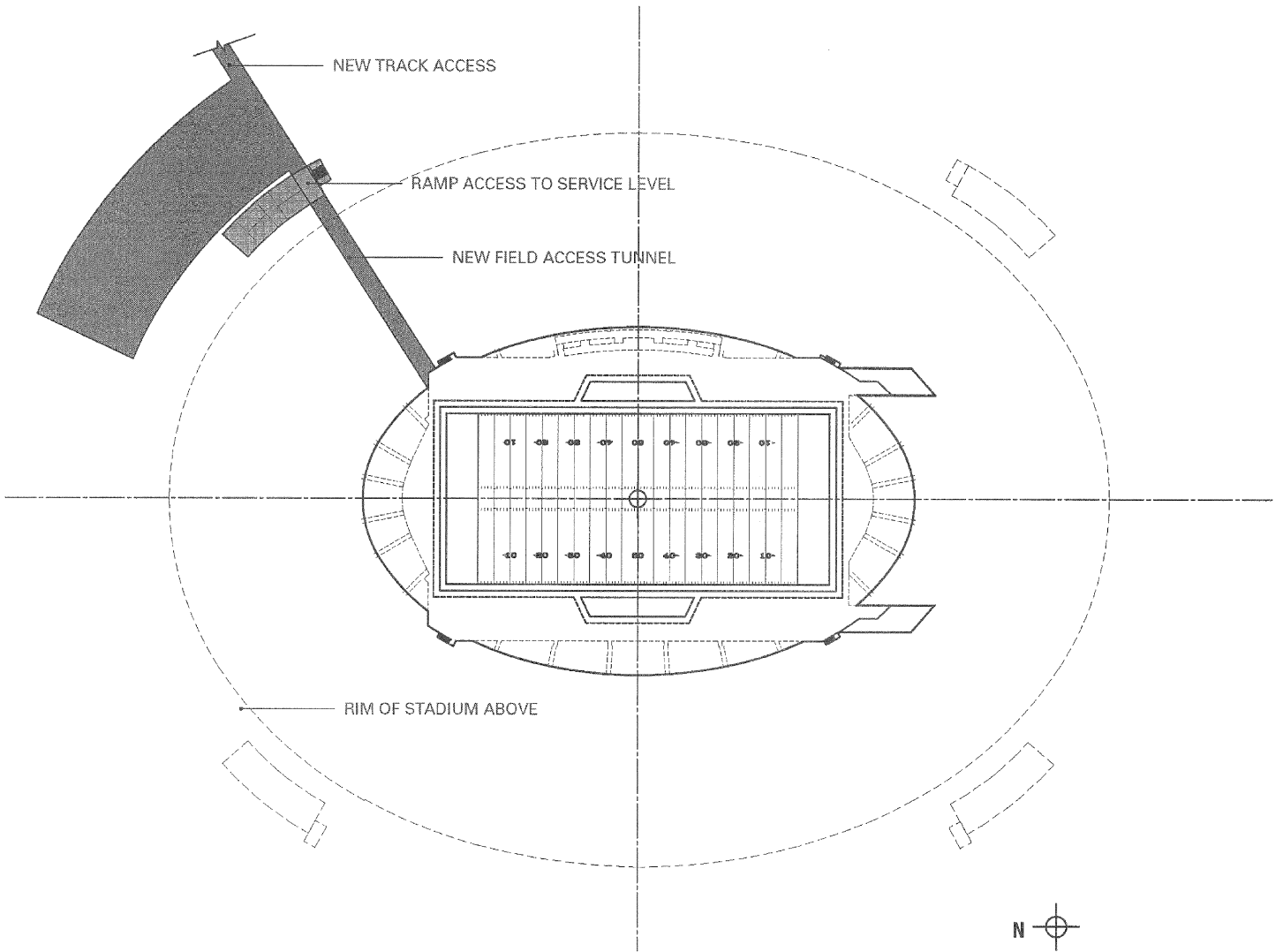
buildingplans

The Rose Bowl has great potential to significantly improve with updates to serve UCLA, the Tournament of Roses and the City of Pasadena for decades to come. The following descriptions and diagrams represent the master plan for the Rose Bowl.

- **Site.** As mentioned above, the setting is unmatched in the country. The history of the site is rich and full of character. The site strategy is to compliment the existing site features, recognize the Arroyo master plan, define vehicular and pedestrian paths more clearly, minimize parking loss, enhance landscape features and develop wayfinding exterior signage.
- **Bowl.** Maintain the integrity of the bowl while improving circulation. There are two main strategies to improve the circulation. One, increase the number of tunnels into the stadium from the plaza level. Two, add vertical circulation to a horizontal walkway located at the back of the bowl to allow patrons two ways to enter/exit the bowl.
- **Seat Comfort.** Several factors contribute to seat comfort: seat width, type of seat, tread depth (amount of leg room), number of seats between aisles (how many people do you cross in front of to get to your seat) and the ease of getting to your seat from the concourse. Currently there are benches and chairback seating in the stadium and seat widths range from 16" to 19". Seat comfort is one of the most challenging items on the list as it has to be balanced with minimizing seat loss. The master plan suggests determining the minimum seating capacity first and then determining the appropriate method of improving seat comfort. Ideally all aspects would be changed but it is unlikely as the seat loss would be significant. It is recommended to add aisles from the back of the vomitories to the last row to decrease the number of seats per row. Additionally, all existing seats should be replaced with better quality seats. An example would be replacing the existing bench seats with more comfortable contoured bench seating.
- **Plaza Level.** Improve the quality and quantity of restrooms, concessions and concourse. The concourse will be expanded and design of the amenities improved. Portable concessions and tents should be removed from the interior concourse to expose the landscape terraces. New plaza level lighting will drastically improve the appearance and functionality on the concourse for night games.
- **Premium Amenities.** A source for potential funding for stadium improvements is building quality suites, club seats and loge boxes. There is a great opportunity to provide significantly better premium amenities on the west side of the stadium. A large club will be built to service premium amenity holders on game days and will be used the rest of the year for private and public events. The space will feature views to the west and into the seating bowl.
- **Press Facilities.** The press box should be replaced with improved space to function efficiently and provide modern telecommunications. The press facility will provide writing press positions and broadcast booths that meet UCLA and Tournament of Roses requirements.
- **ADA Seating.** Improve and add wheelchair seating where feasibly possible. Sightlines should meet Department of Justice standards.
- **New signage.** Provide quality directional signage throughout the stadium to assist in better fan experience. Provide environmental graphics throughout to showcase the history and traditions at the Rose Bowl.
- **Videoboards and Scoreboards.** Replace the existing scoreboards and videoboard with modern boards to enhance the spectator experience. Ribbon boards can be placed on the fascia of the new press box. The design and placement of the boards will need to strongly consider the exterior design as it impacts the Rose Bowl sign.



02d

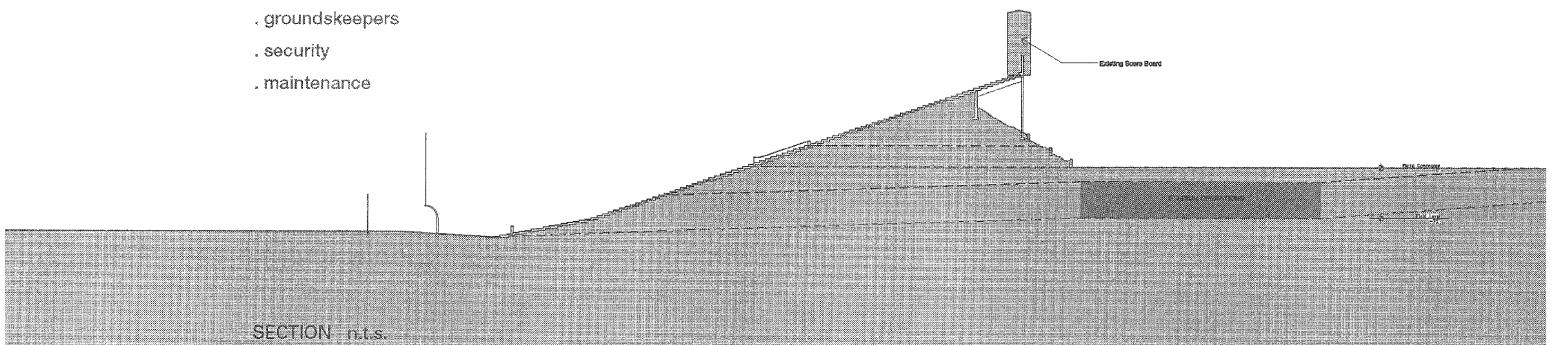


service level (underground)

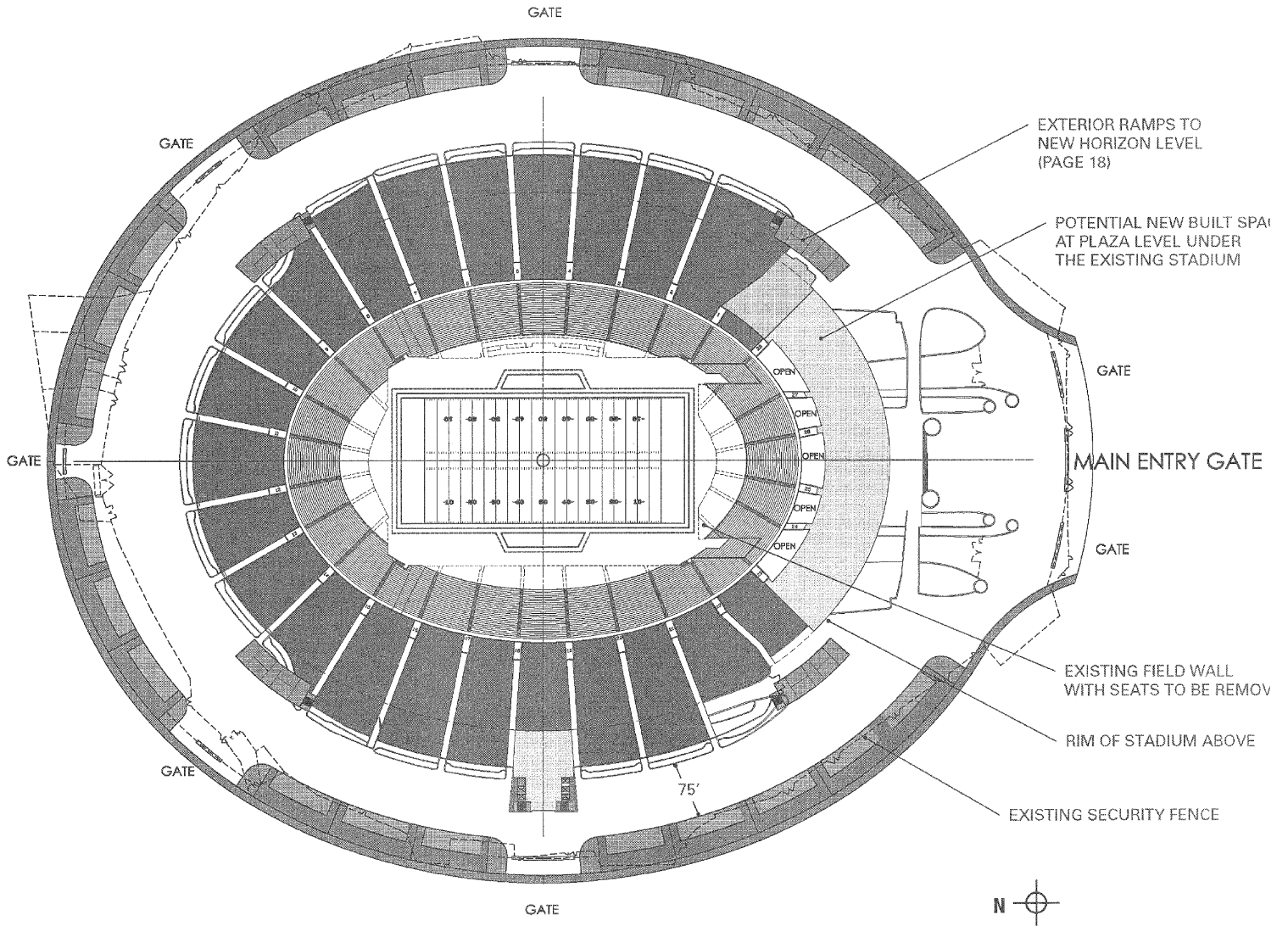
 service

UNDERGROUND AREA DEDICATED FOR:






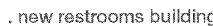

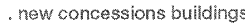



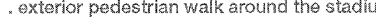



- . operations
- . food service
- . storage
- . game day management
- . media
- . groundskeepers
- . security
- . maintenance

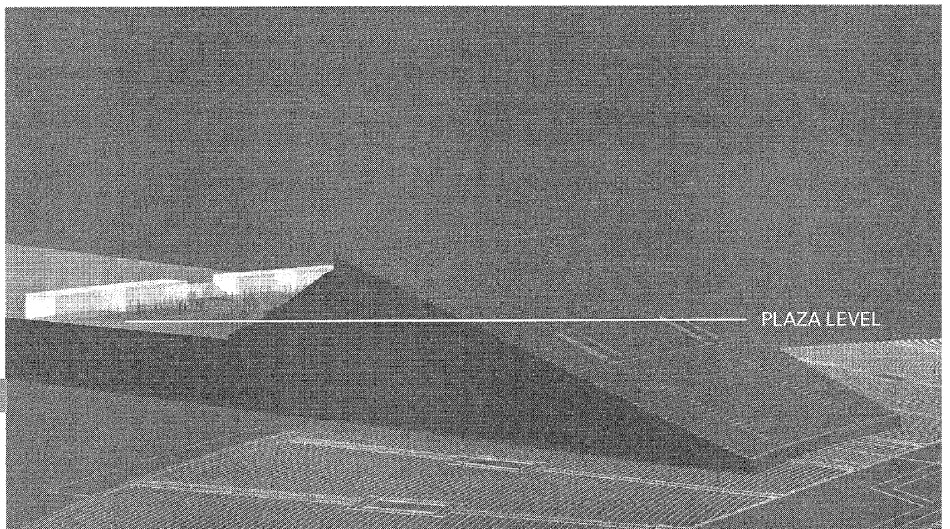
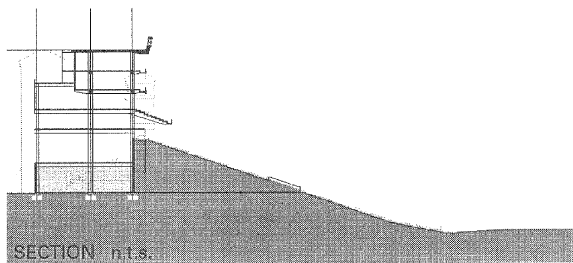


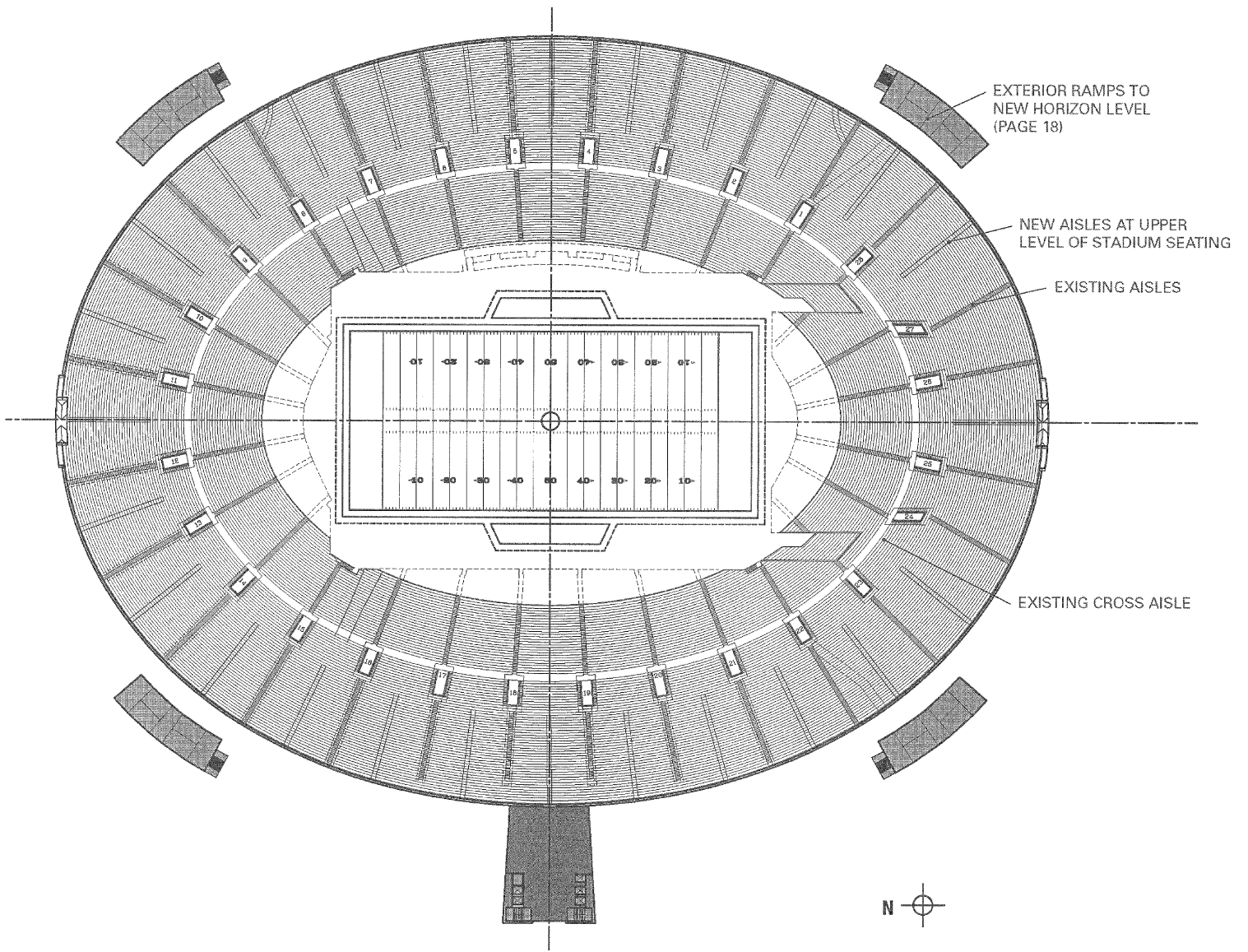
SECTION n.t.s.



plaza level (grade level)

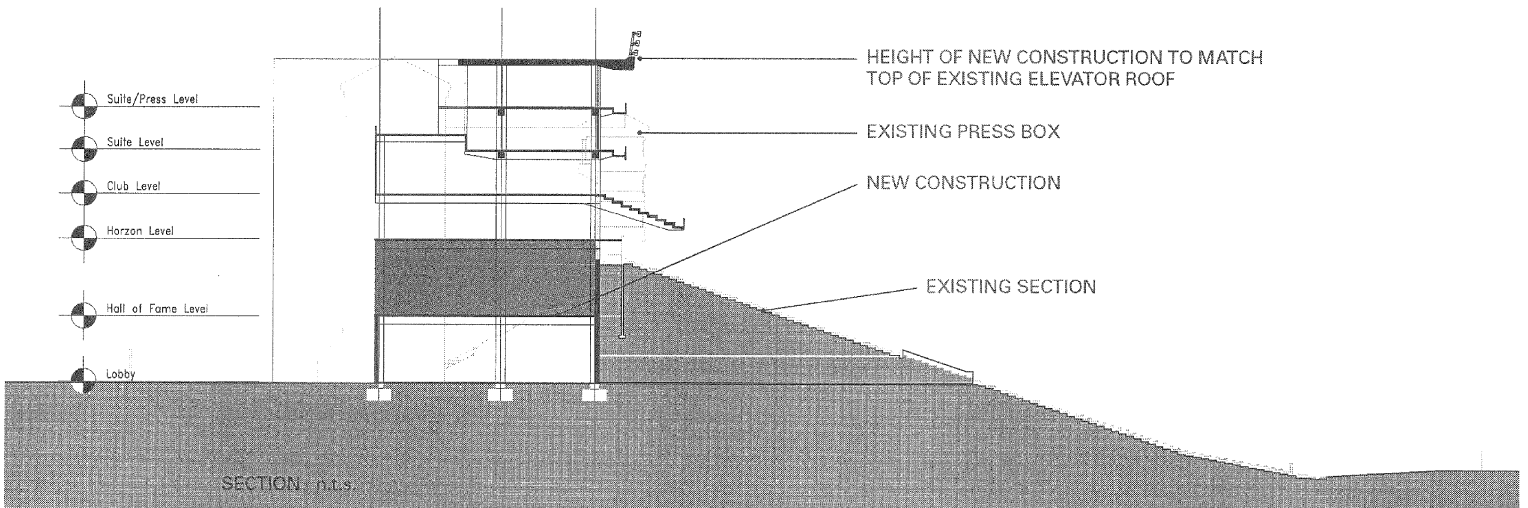
- | | | | |
|---|----------------------|--|---|
|  | pedestrian walk |  | . plaza lighting |
|  | toilets |  | . reconstructed stone terraced walls |
|  | concessions |  | . new restrooms buildings |
|  | lobby/circulation |  | . new concessions buildings |
|  | vertical circulation |  | . expanded concourse for convenience and safety |
|  | ticket |  | . exterior pedestrian walk around the stadium |
|  | storage/mechanical | | |
|  | existing | | |
|  | landscaping | | |

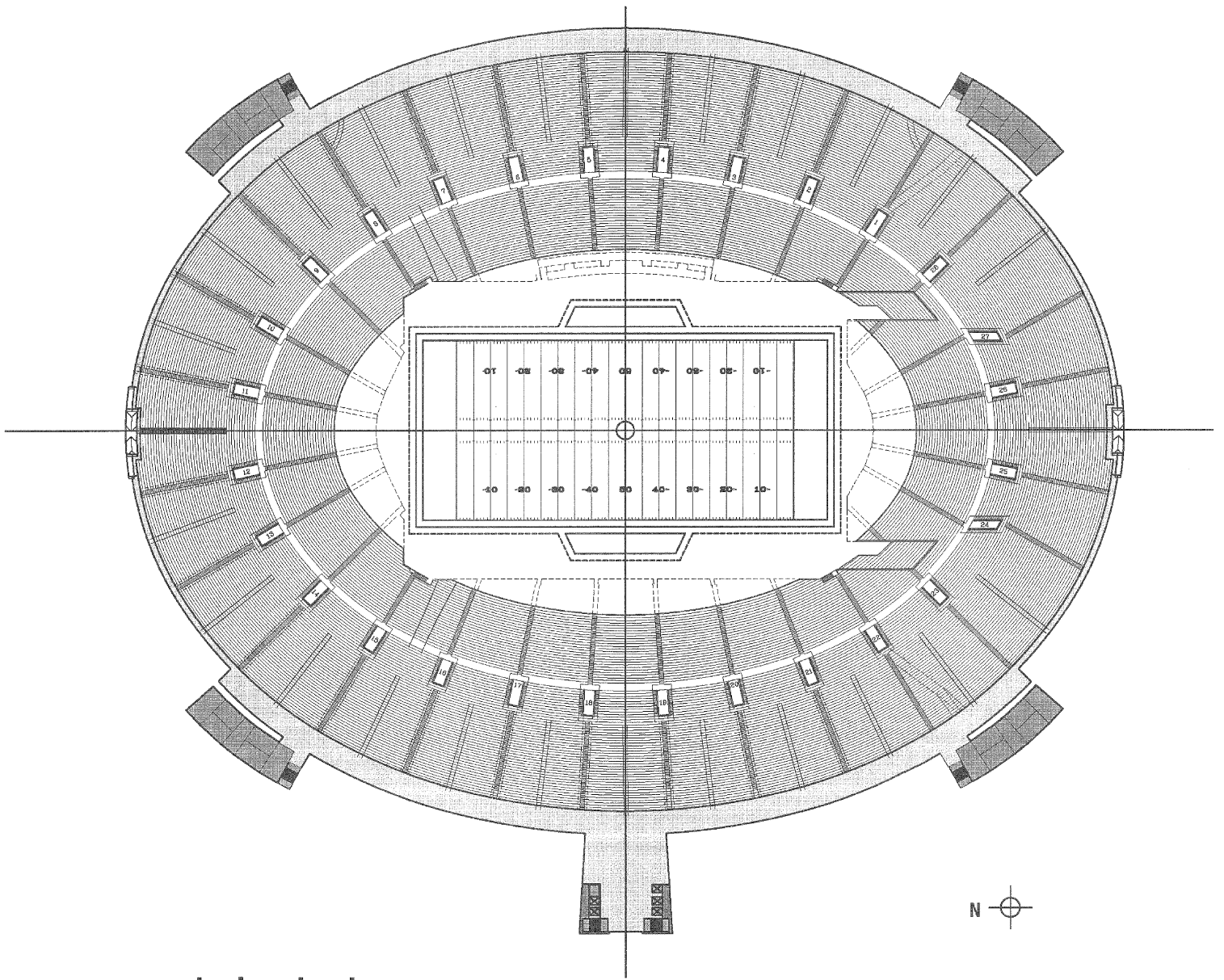







hall of fame (west sideline addition)

-  hall of fame
-  vertical circulation
-  mechanical
-  . new hall of fame to celebrate the stadium history
-  . open year round

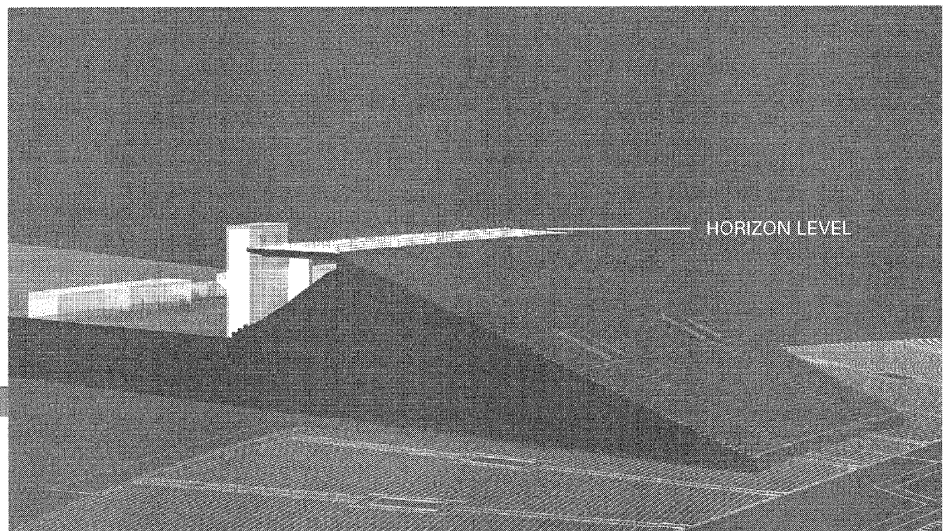
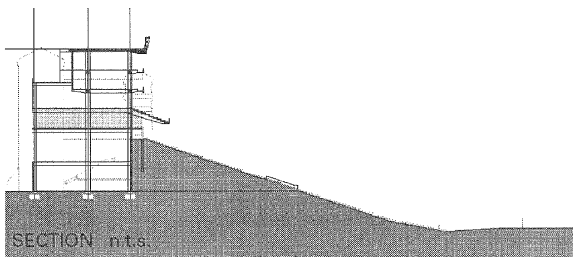


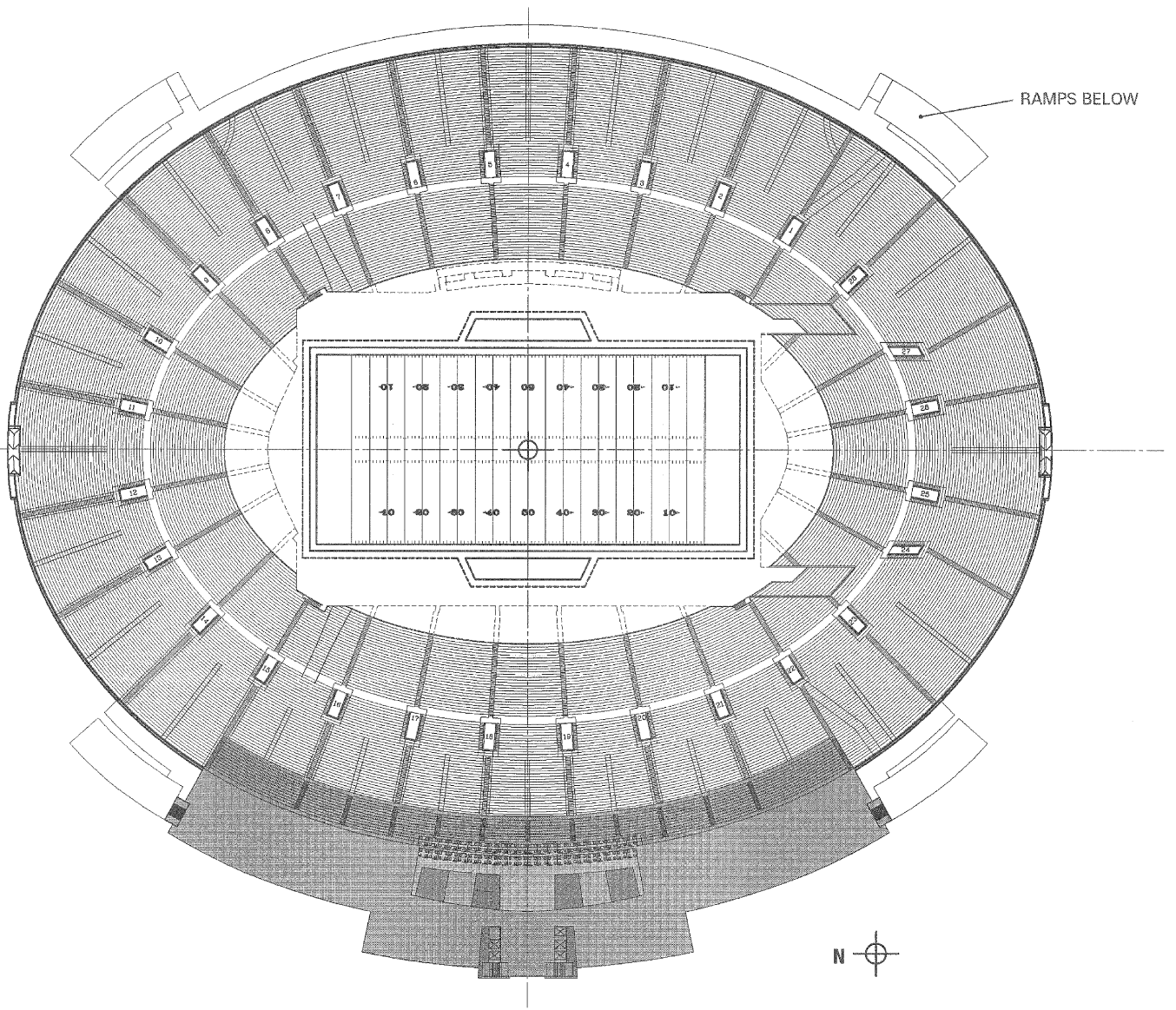


horizon level








-  circulation
-  vertical circulation
-  mechanical

- . opportunity for additional temporary seating for large events
- . new concourse at the back of the upper bowl, 10'-30' wide
- . alleviates existing tunnel congestion
- . new vertical circulation from the plaza to the horizon level
- . opportunity for additional wheelchair seating

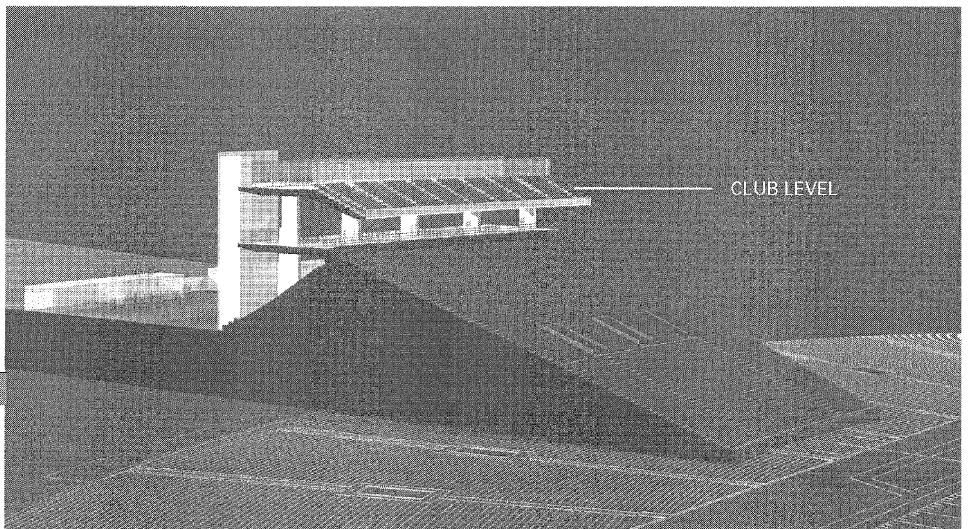
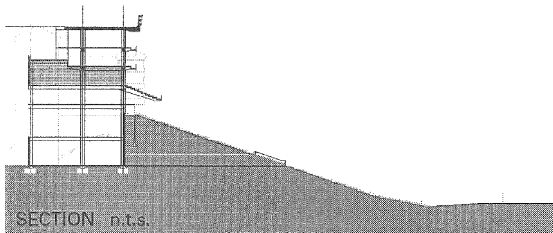


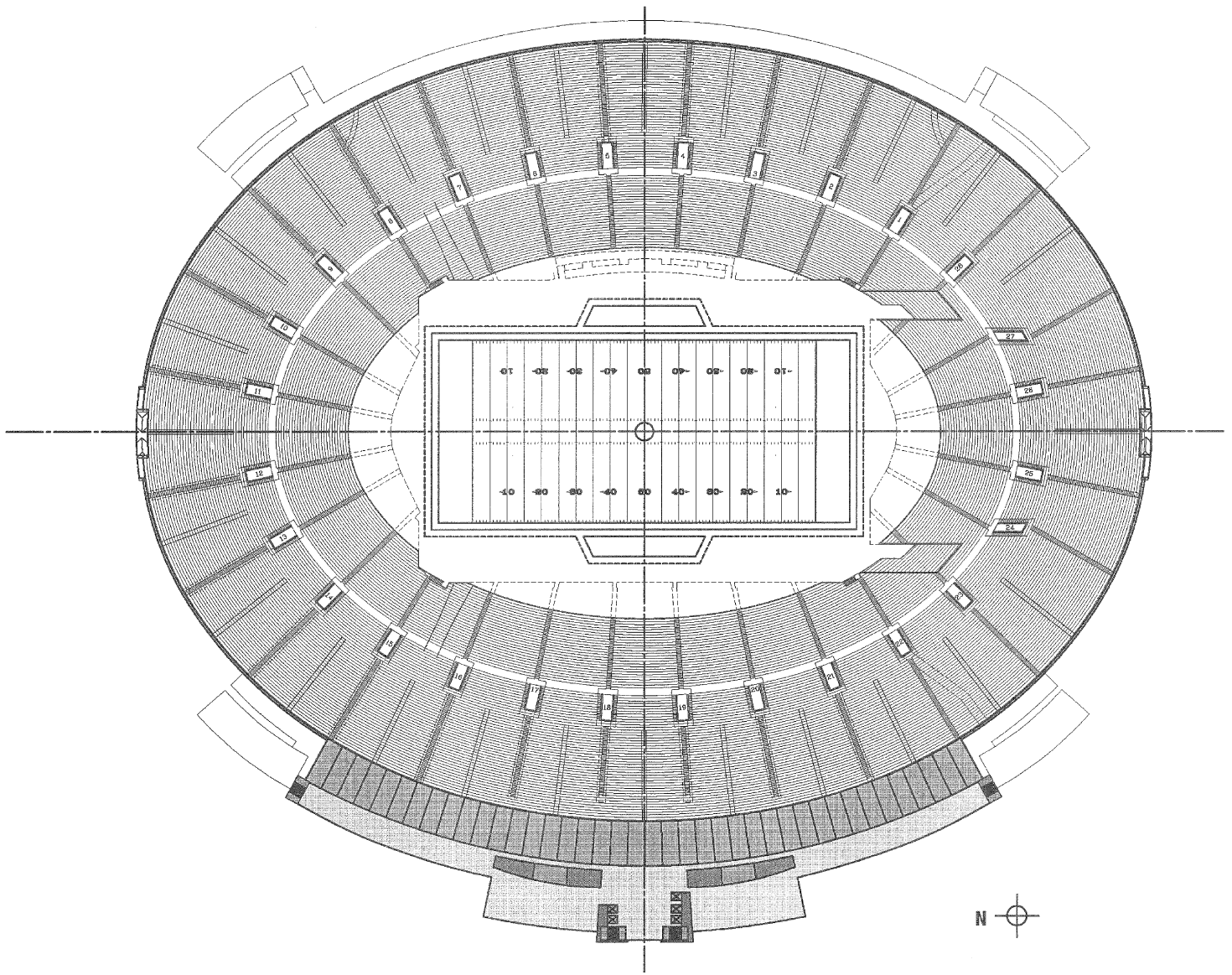


club level (west sideline addition)



-  outdoor club seats
-  toilets
-  concessions
-  club lounge
-  vertical circulation
-  mechanical
-  loge lounge

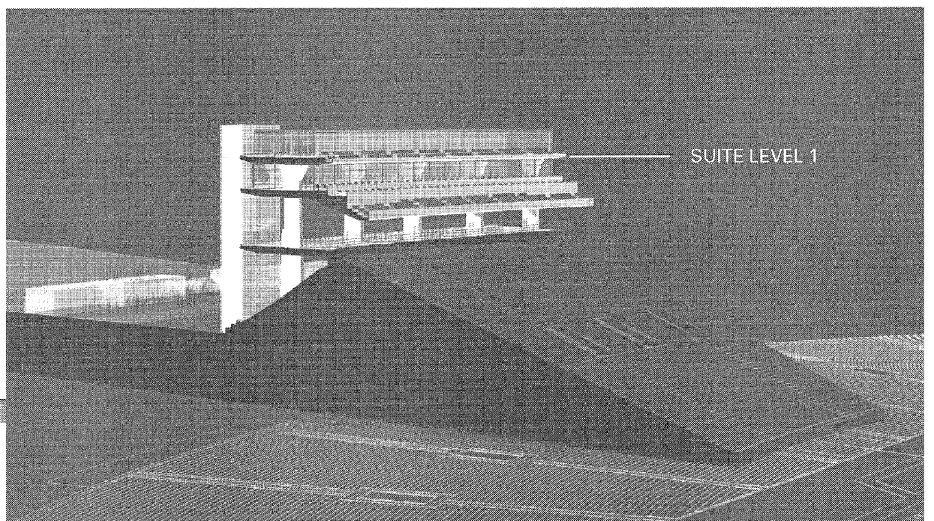
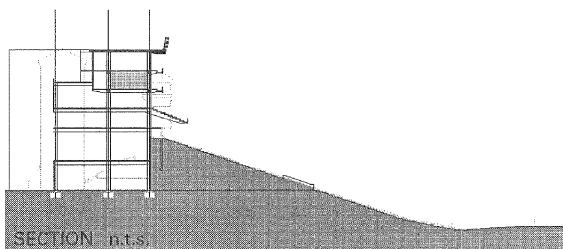
- . 2,000 to 2,500 outdoor club seats
- . 50 loge boxes with 4 seats each (optional)
- . club available for year round use
- . great views to the field
- . optional indoor club seating

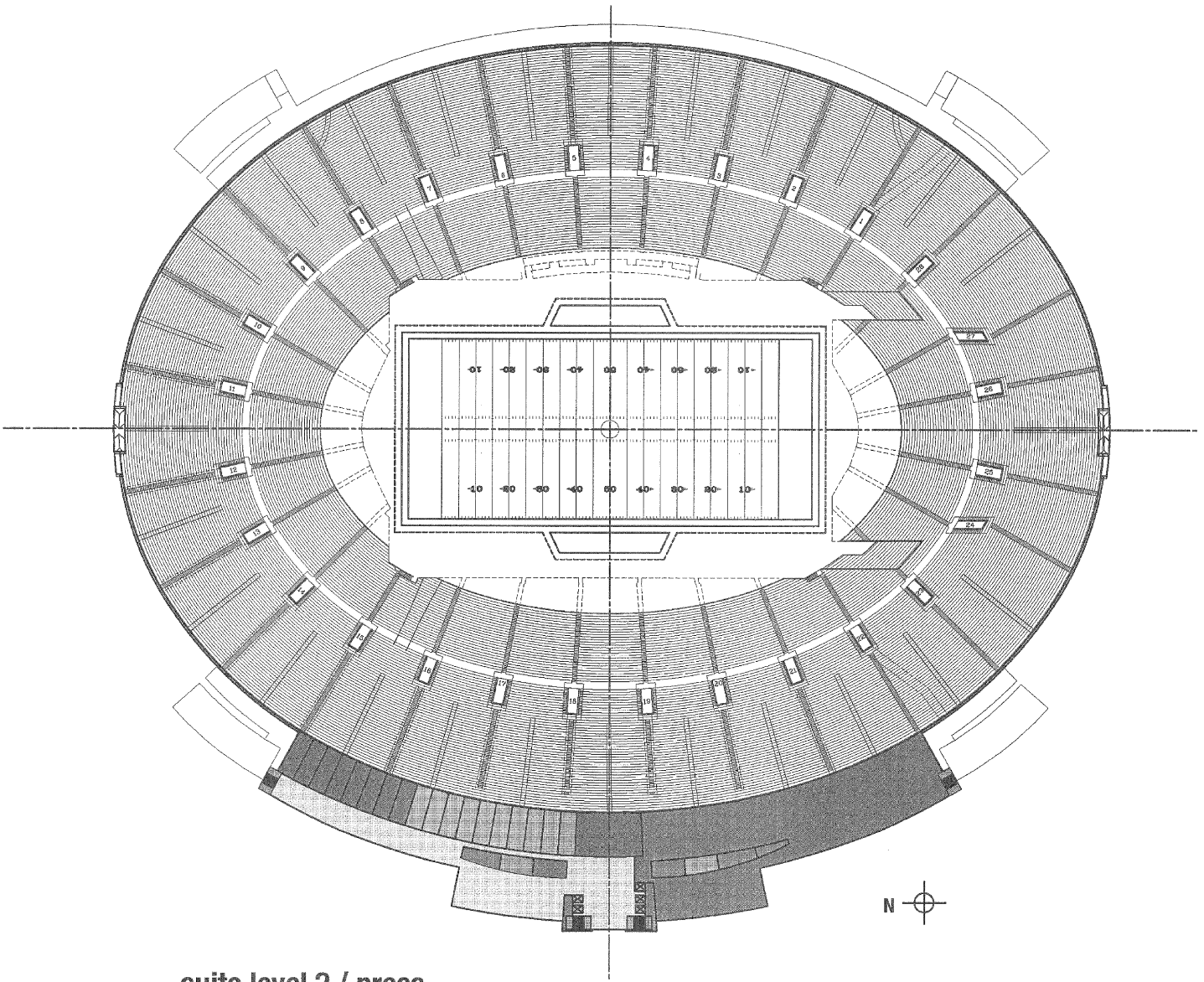











suite level 1 (west sideline addition)

-  suites
 -  toilets
 -  concessions
 -  circulation/lounge
 -  vertical circulation
 -  mechanical
- . 40 suites
 - . 3x the area of existing suites
 - . access to the stadium club

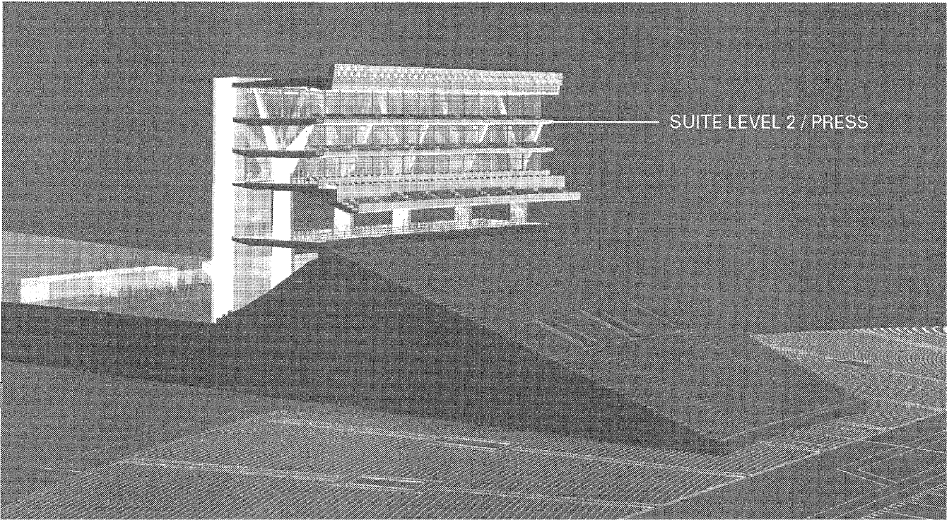
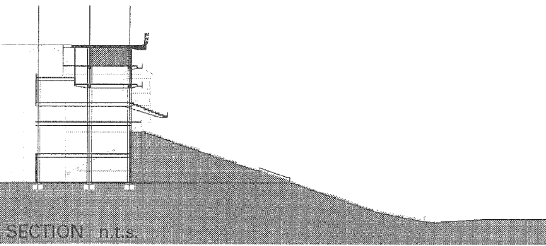


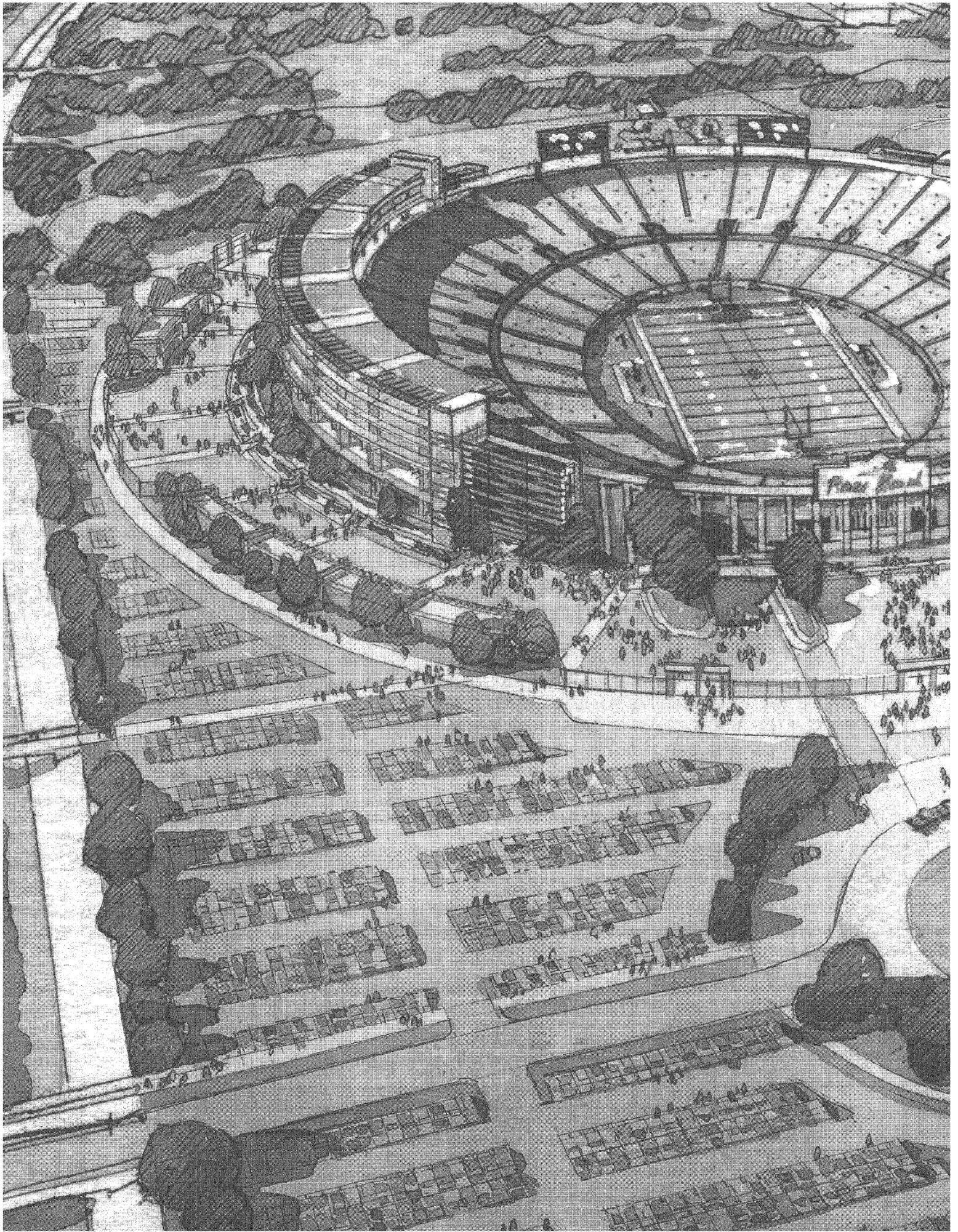


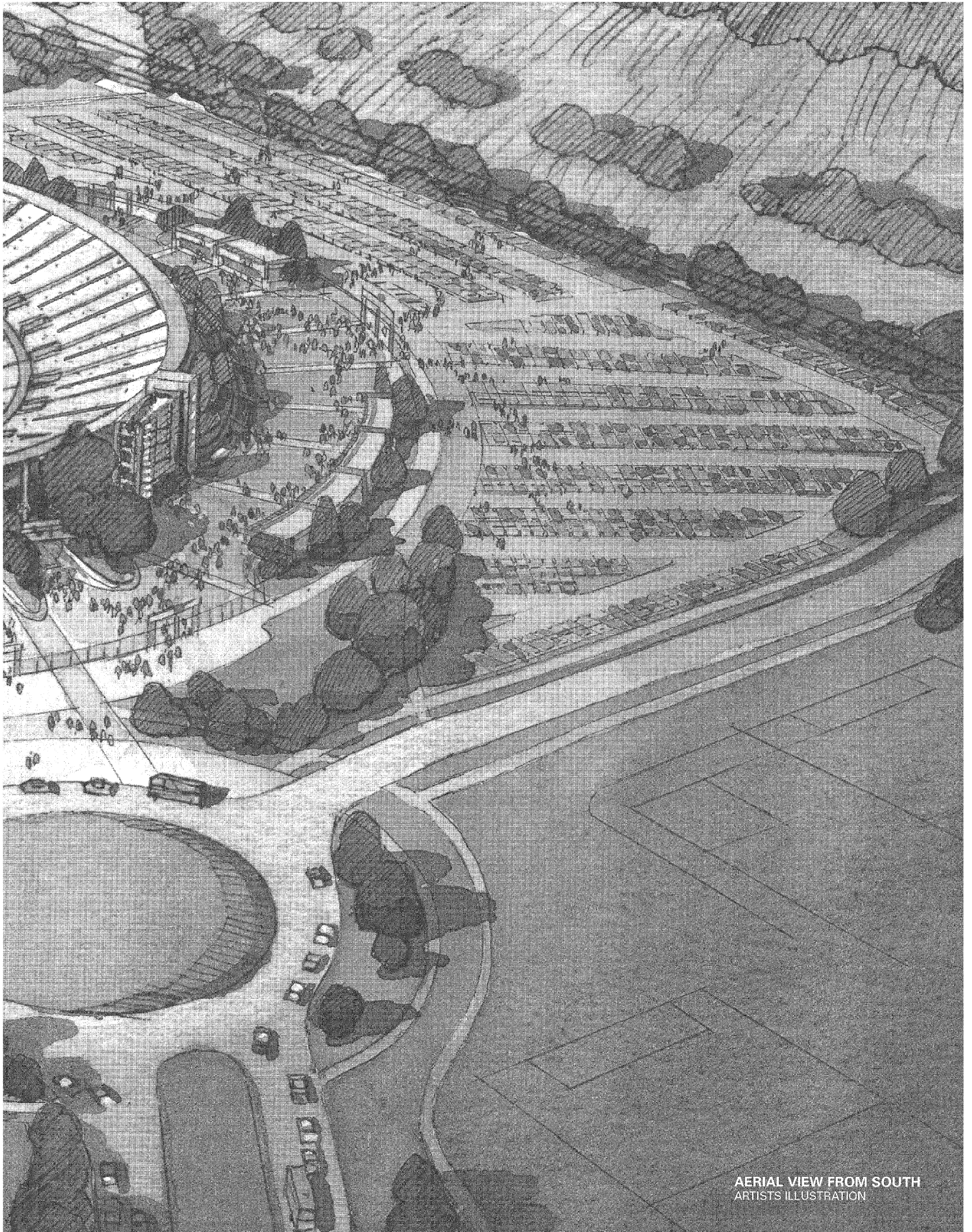
suite level 2 / press

-  press
-  suites
-  toilets
-  concessions
-  circulation/lounge
-  vertical circulation
-  mechanical

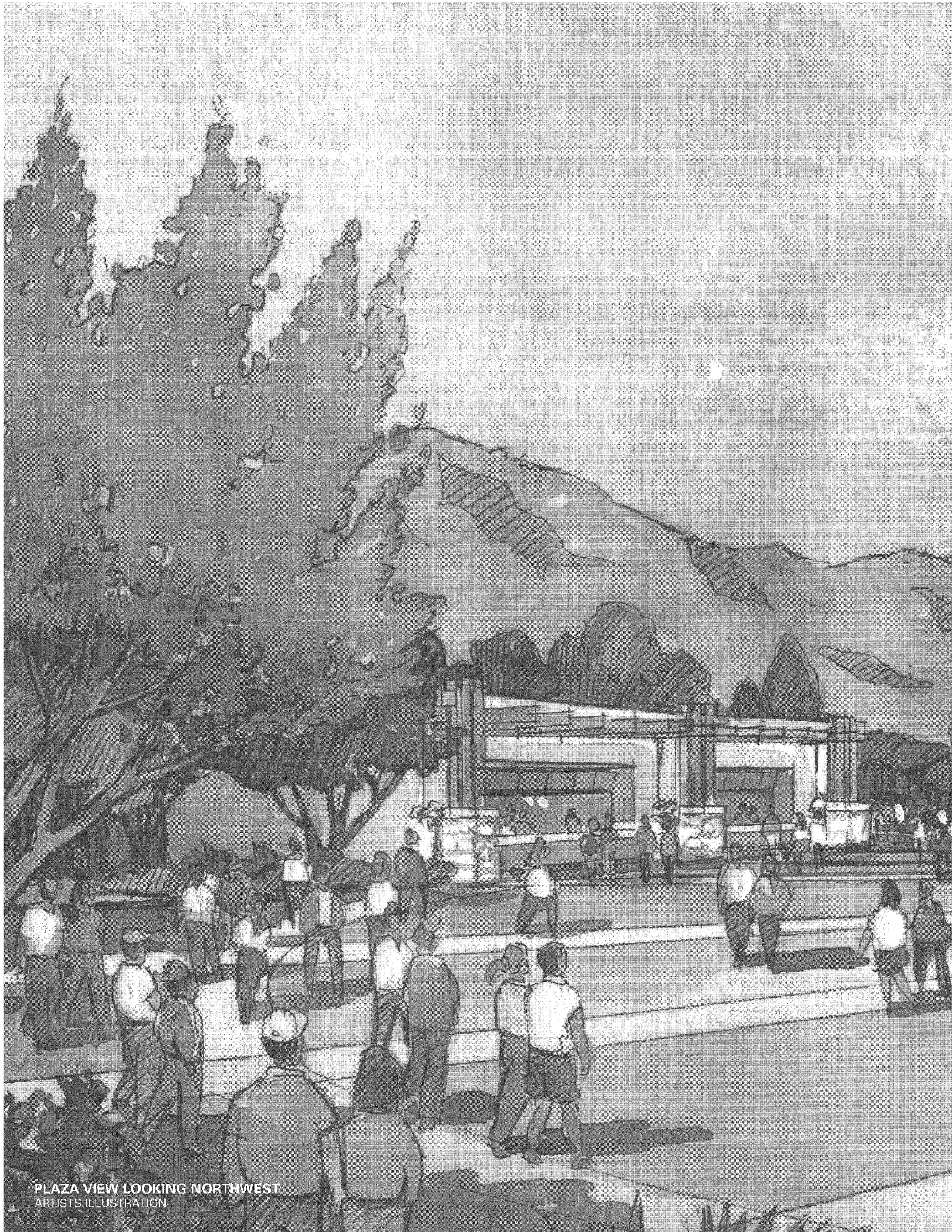
- . 10 suites
- . broadcast booths
- . 260 writing press positions
- . meeting rooms available for year round use
- . state of the art technology
- . security command post
- . height to match top of existing press box elevator roof (Page 17)



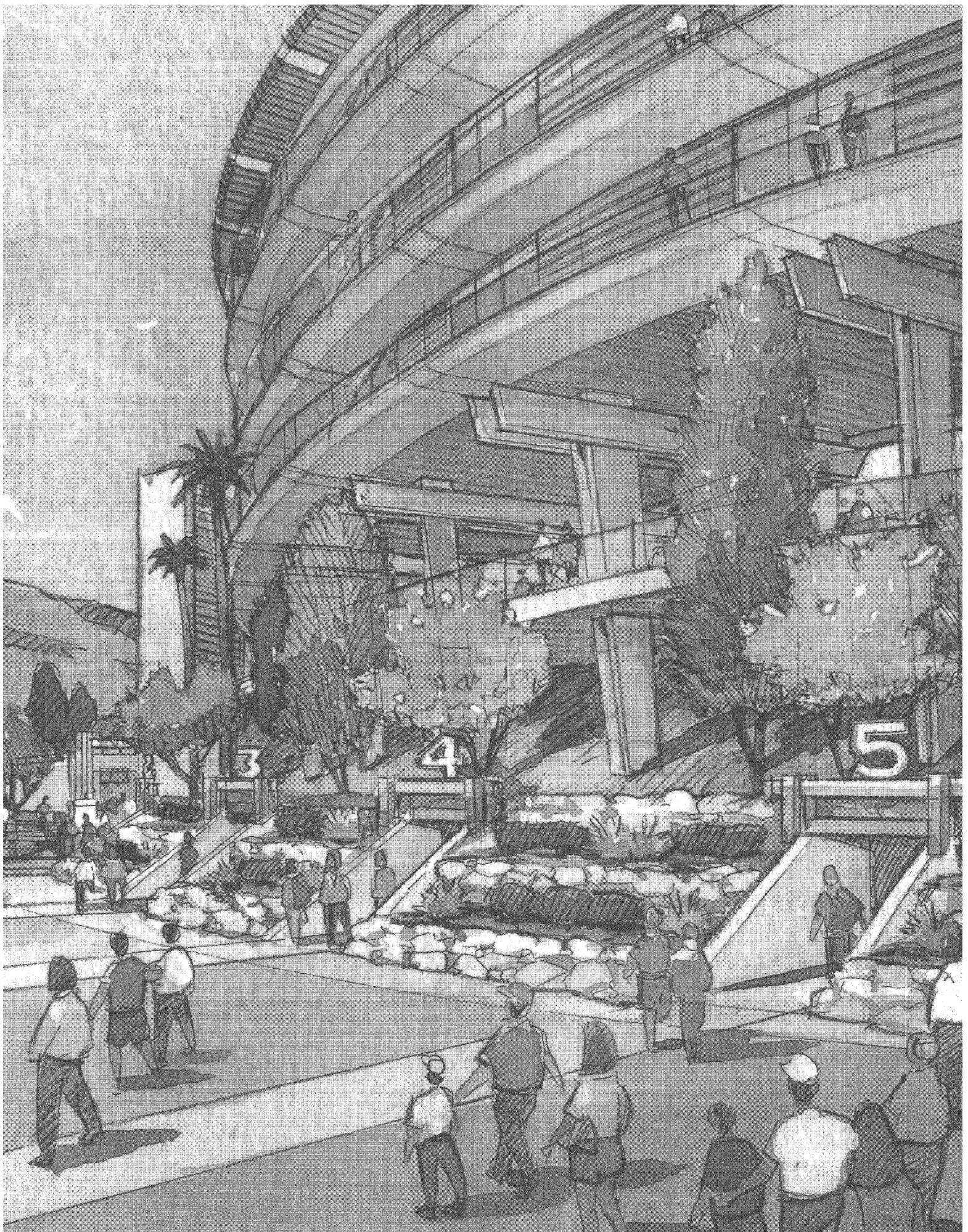


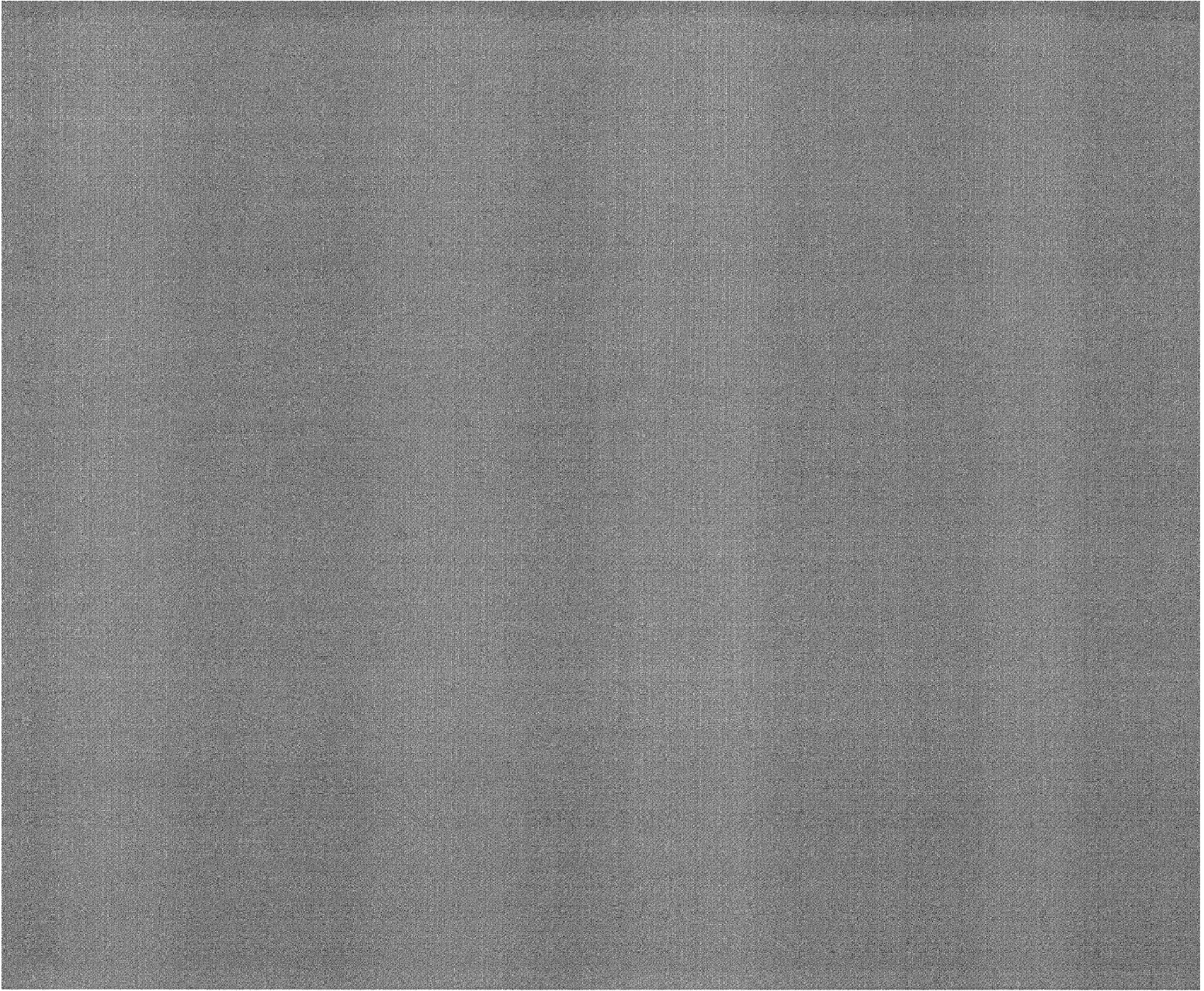


AERIAL VIEW FROM SOUTH
ARTISTS ILLUSTRATION



PLAZA VIEW LOOKING NORTHWEST
ARTISTS ILLUSTRATION





costestimate

03

Conditions Of Construction

The pricing is based on the following general conditions of construction:
A start date of January 2009

A construction period of 24 months

Cost escalation is to a construction midpoint of January 2010

The general contract will be competitively bid with qualified general and main subcontractors

There will not be small business set aside requirements

The project will not be completed in phases. If the project requires phasing there will be a phasing premium cost.

The general contractor will have full access to the site during normal business hours

Additional Notes

The cost estimate is a rough order of magnitude cost estimate. The estimate includes a construction cost estimate and a range of total project cost. The estimated project cost range of 1.25% to 1.5% of the construction cost includes items such as FF&E, architectural and design fees, geotechnical, hazardous material handling, disposal and abatement, construction management fees, owner insurance, etc. As the project moves forward the cost estimates are likely to change as the design and scope are refined.

The master plan scope of work estimate was divided into project components that can be phased. A final phasing plan was not completed as a part of the master plan. Revised cost estimates are recommended as the projects move forward. There will likely be efficiencies (cost and schedule) in building components together rather than separate.

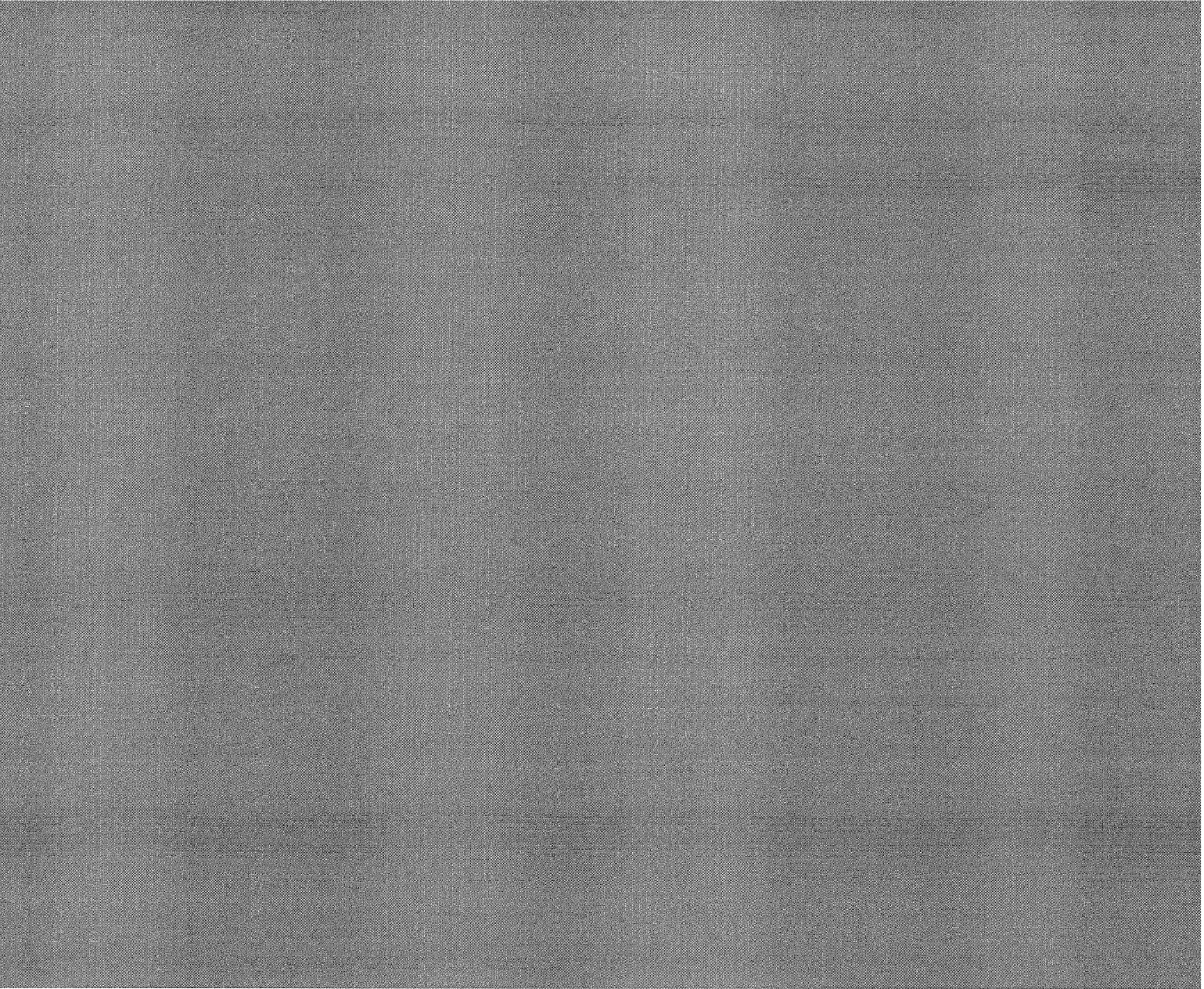
Inclusions

This report provides a cost plan associated with the master plan scope of work to renovate and upgrade the existing Rose Bowl facility as described in the previous pages. As well as the total cost, developed in the Davis Langdon format, we have reallocated these costs over a list of potential tasks developed by the owner and design team.

In our last meeting, the list of potential tasks was prioritized based on the master planning goals identified for this project. The top five are defined as project priorities for the purpose of the cost estimate.

DESCRIPTION	CONSTRUCTION COST (IN MILLIONS)	RANGE OF TOTAL PROJECT COST		
		PROJECT COST (1.25) (IN MILLIONS)	PROJECT COST (1.4) (IN MILLIONS)*	PROJECT COST (1.5) (IN MILLIONS)
PROJECT PRIORITIES				
Horizon Level / New Aisles / Vertical Circulation	\$36.3	\$45.3	\$50.8	\$54.4
West Sideline Addition	\$71.1	\$88.9	\$99.5	\$129.4
Plaza Level Renovation and infrastructure upgrades	\$86.3	\$107.8	\$120.8	\$136.3
Replace All Seating	\$14.5	\$18.1	\$20.3	\$21.75
New Video Board / Ribbon Board	\$7.3	\$9.1	\$10.2	\$10.9
OTHER POTENTIAL PROJECTS				
Hall of Fame - TI	\$3.5	\$4.4	\$4.9	\$5.3
South Plaza Behind Court of Champions	\$14.4	\$18.0	\$20.2	\$21.6
Service Level (Underground)	\$19.0	\$27.7	\$26.6	\$28.5
Horizon Level Amenities	\$13.3	\$16.6	\$18.6	\$19.9
Landscaping	\$3.6	\$4.5	\$5.0	\$5.4
Field Lighting (East Side)	\$1.4	\$1.7	\$1.9	\$2.1
Graphics	\$1.3	\$1.6	\$1.8	\$1.9
Sound System	\$0.9	\$1.1	\$1.2	\$1.3

* Project cost used by Barrett Sports Group in preparation of their 'Market Analysis - Preliminary Findings, February 1, 2007



civilinfrastructure

Introduction

This report addresses the capital improvement program outlined in HOK's Rose Bowl Collegiate Master Plan (HOK) as it relates to civil infrastructure components. It is a great undertaking to fully build out the master plan. However, when evaluating civil infrastructure in a landmark structure that has taken on many renovations, it is critical to evaluate the existing civil systems and implement new ones to meet the needs of the Rose Bowl.

Because of the complexity of each capital improvement program component, the preliminary architectural program and unknown issues surrounding the specific site; the recommendations presented must be checked against the final architectural program and other technical studies that typically accompany projects of this magnitude.

Capital Improvement Program

- New Press Box with club level, loge seats, two suite levels, and upper concourse.
- Expanded Plaza Concourse
 - New concession and restroom facilities to replace old concession and restroom facilities
 - Vertical circulation
 - Option 1 – 2 ramps and 7 elevator cores
 - Option 2 – 6 ramps and 7 elevator cores
 - Option 3 – 4 ramps and 9 elevator cores
- Service Facility located at northeast area.
 - Cut and cover underground and utilize Tunnel #11 for access to stadium.

Each of these components includes to varying degrees the following civil engineering issues.

- Storm Water Management System
- Utilities Plan – Storm water, waste water, electric, gas, and telecommunication.
- Traffic Management and Circulation

These issues are discussed within the context of each component. However, it is possible that these issues may be combined depending on the final architectural program implemented and the timing of each component.

Historical Flooding

Flooding in the stadium and access tunnels occurs from time to time. Flooding in the stadium and tunnels could occur due to blockage of the existing 30" diameter outfall pipe or due to excessive rainfall beyond the existing storm drain system's outfall capacity.

Storm waters have also entered the existing locker rooms in the past. The entrances to the newly constructed locker rooms and media room elevations were the highest surfaces attainable to meet ADA requirements. With the addition of a new storm drain system and pump to alleviate flooding possibilities, there is some redundancy to protect against flooding. This solution applies to the south end of the stadium. Presently, flows from the northern side of the stadium flow to the south and are collected in a storm drain system that surrounds the field. This flow is piped to the existing 30" outfall.

New Press Box

The proposed press box is in replacement of the existing press box. The foot print of the new press box is similar in size to the existing one. The amenities and capacity of the new press box are enhanced which may increase demand on existing utilities. Existing utilities and associated appurtenances associated with the press box should be evaluated for replacement or upgrade.

When possible, the grading and drainage design philosophy would be to re-direct storm water sheet flows to the Arroyo in lieu of catch basins. In addition, sheet flows should be directed towards designated planting and landscape areas for filtration purposes. The landscape should be designed as vegetated filter strips to accommodate this purpose. (See the storm water management section for further details).

Utilities for the press box should be examined to handle peak capacity. Waster water pipes, electrical trunk lines, water supply lines, and gas mains are located within close proximity of the proposed press box footprint. The proposed press box incorporates additional seating that the current press box does not. This added capacity will have to be taken into consideration when sizing utilities for this structure. Because of additional people flowing through the press box area, additional space may be required to accommodate circulation patterns. This component may be combined with the expanded plaza concourse.

Expanded Plaza Concourse

This project expands the existing plaza and concourse areas around the stadium. As part of this effort, not only will relocation and rehabilitation of existing utilities occur, but new structures for concessions and restrooms will be built. A new paving surface over existing impervious areas should be considered as part of this work.

With numerous electrical vaults, fire hydrants, and other infrastructure appurtenances in the existing plaza areas, it is recommended that these items be relocated so that a relatively flat unobstructed surface is achieved. Removal or relocation of these obstacles will improve pedestrian circulation.

Utilities are located throughout the existing concourse and serve the various facilities within the stadium. These utilities should be employed as a means to service the new facilities associated with the expanded plaza concourse. In addition, because the plan involves adding more restroom facilities, it is recommended that an extensive study be undertaken to examine whether or not the current systems can handle the new capacity. If new utility trunk lines are necessary, then the concourse can be used as a large trench to house the new utility lines.

Storm water run off can be filtered through landscape areas located adjacent to new concession and restroom facilities. The landscape should be designed to accommodate this purpose. The filtered water can then sheet flow off the property and into existing drainage patterns.

Additionally, where possible, storm water flows should be directed towards the north golf course if it is used as a retention area. See storm water management system for further information.

Service Facility

Similar in scope to the new locker room facility, the service facility will house back of house and kitchen facilities for the Rose Bowl. Situated in the northeastern area of the stadium, it will be a subterranean facility with main access from the stadium and auxiliary access from other outer points.

New storm water and waste water infrastructure may be implemented for this facility and connected to their respective collection systems. It is assumed that pumps will be necessary to handle both waste water and storm water flows. Re-routing of existing utilities may occur, including but not limited to electrical transformers and pull boxes, water supply line, gas main, and waste water line.

Storm water run off can be filtered through landscape areas located adjacent to new concession and restroom facilities. The landscape should be designed to accommodate this purpose. The filtered water can then sheet flow off the site and into existing drainage patterns.

Storm Water Management System

As illustrated in the condition survey report (Osborn), the current storm water system is slowly deteriorating and will be in need of repair or replacement. As the Rose Bowl continues its capital improvement program (CIP), these critical infrastructure systems should be evaluated.

As in the new locker room and media center facilities, it was decided that improvements to the current system and new systems would likely better serve the Rose Bowl's long term needs. A new storm water system replaced an aging system that was penetrated by tree roots and other material over its 30 plus year life span. Rather than rehabilitate the system, a new storm drain system will be installed to handle current capacity and service the needs of the new facilities. In the CIP, a critical evaluation of how existing utilities can serve new facilities should be undertaken. In addition, this evaluation should make recommendations for new utilities should existing ones fail to meet the proposed facility needs

Storm water infrastructure must be addressed as new facilities are planned. As a comprehensive plan, the Rose Bowl should address a storm water pollution elimination system as it is outlined in the National Pollutant Discharge Elimination System (NPDES) by the US Environmental Protection Agency (EPA). There are specific guidelines that a new development must follow when implementing a pollution discharge elimination system. However, the Rose Bowl is an existing stadium, with landmark status. It has the advantage of runoff from the field being filtered before it enters the storm water system. In addition, it has the golf course located to the north as an opportunity to become a retention basin during 25 year or higher storm events. Conversely, storm flows that are treated and released within the confines of the stadium or outlying parking areas would be commingled with untreated flows from surrounding and adjacent Rose Bowl areas. This presents additional complexities in treating storm flows at the Rose Bowl.

The challenge lies in implementing 21st century concept and technology with an historic aging facility built in the early 1900's with numerous renovations and modifications. Implementing a storm water management plan in a "piece meal" fashion would not achieve the goal of filtering and cleaning storm water before it enters the public system.

Currently, storm water from the stadium is collected at several points and flows to two points where it ultimately enters the Arroyo Channel. A 30" storm drain collects flows from the stadium and a 36" storm drain collects flows from the southerly and easterly side the surrounding stadium via catch basins. In addition, there is another storm drain located to the south at N. Arroyo Blvd and Seco St. to handle roadway and parking lot runoff via several catch basins (Bell).

Recommendations

The storm water should be treated where practical and realistic, while the improvements for this treatment are balanced with the aesthetics and operation of the Rose Bowl. It is suggested that a more specific study be undertaken to determine the feasibility of turning a portion of the golf course located to the north as an infiltration basin and grassed areas for filtration purposes.

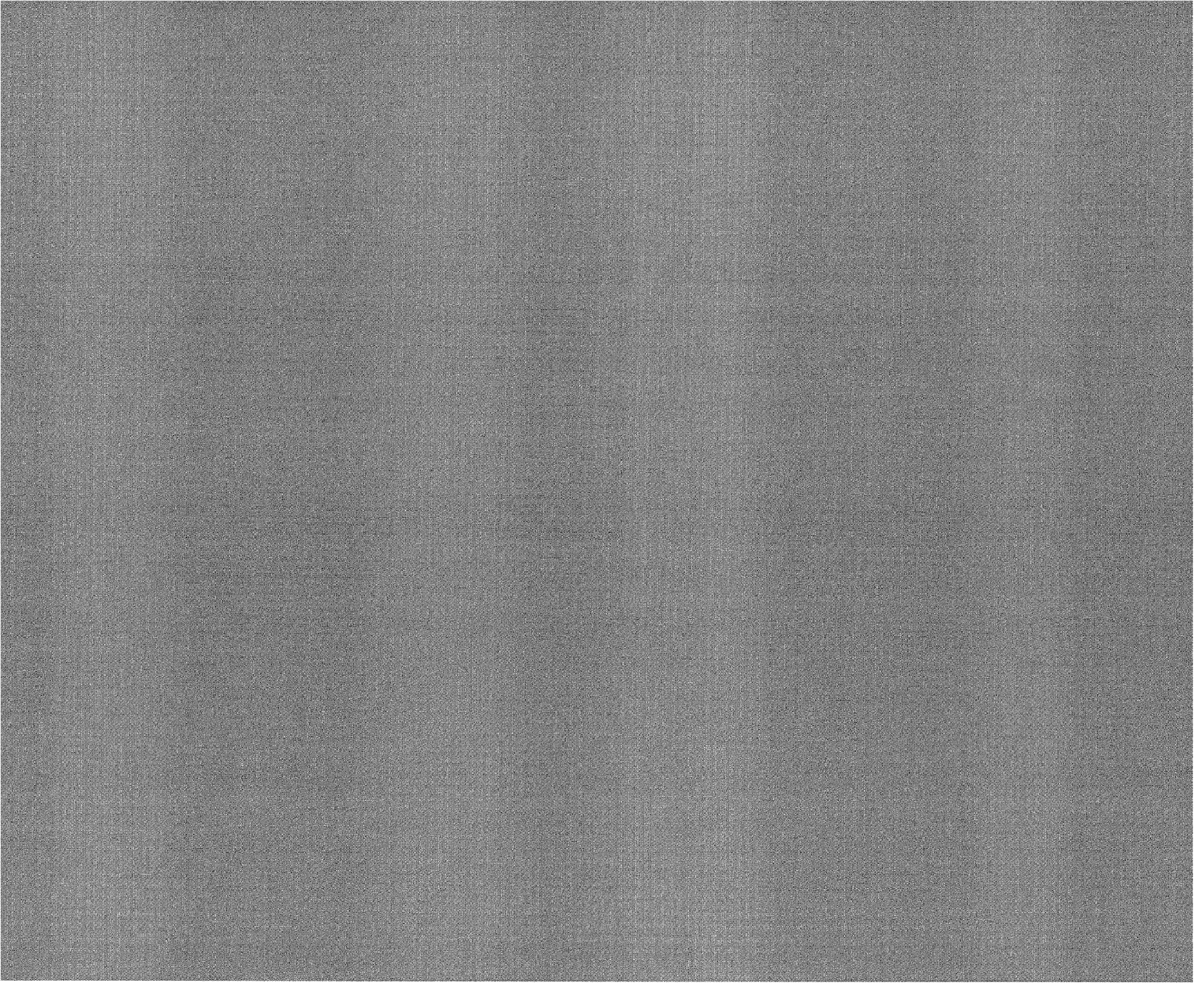
The existing golf course water hazard could be expanded to accommodate storm water flows creating a wet or retention pond. This water feature can be designed to accommodate flows from a majority area of the stadium and concourse areas. This feature has both recreational and aesthetic benefits. This method removes pollutant from water by both physical and biological processes, thus they are more effective at removing pollutants than extended or dry detention basins.

In addition, sheet flows should be directed away from existing catch basins where possible and directed toward landscape areas that serve as vegetated filter strips. Vegetated filter strips are vegetated sections of land similar to grassed swales, except they are essentially flat with low slopes, and are designed only to accept runoff overland sheet flow. Wooded and grass filter strips have slightly higher removal rates. This feature may be implemented at or near the golf course, as well as the landscape areas in the expanded plaza concourse.

To handle storm water flows within the stadium itself, storm flows should be directed toward the north and directed towards vegetated filter strips or perhaps the golf course water feature. A diversion device can be implemented to accommodate this. The golf course water feature can serve to filter flows from throughout the Rose Bowl. The new press box and expanded concourse projects should utilize this asset.

References

1. Bell Land Surveying, March, 1997. "Rose Bowl Topographic Survey and Utility Schematic" Brea, California.
2. California Stormwater Quality Association (CASQA), 2003. "Stormwater Best Management Practice (BMP) Handbooks" <http://www.cabmphandbooks.com/>
3. HOK Sport, September 6, 2006. "Rose Bowl Collegiate Master Plan Final Powerpoint Presentation" Kansas City, Missouri.
4. HOK Sport, October 10, 2006. "Rose Bowl Renovation Presentation Drawings" Kansas City, Missouri.
5. Los Angeles County Department of Public Works, September 2002. "Development Planning for Storm Water Management, A Manual for the Standard Urban Storm Water Mitigation Plan (SUSMP)" Los Angeles, California.
6. The Osborn Engineering Company, November 5, 2003. "Rose Bowl Condition Survey Report" Cleveland, Ohio.
7. United States Environmental Protection Agency. "National Pollutant Discharge Elimination System (NPDES)" <http://cfpub.epa.gov/npdes>



codelife safety

EXECUTIVE SUMMARY

This report represents the Building Code analysis conducted by FP&C Consultants, Inc. to assist the Rose Bowl Operating Company and the Design Team in evaluating how code requirements may impact or be addressed by the Master Planning Studies on the Stadium.

The Rose Bowl is on the National Historical Register.

While the Stadium may be considered to be in substantial compliance with the applicable Building Code requirements primarily due to the consideration given by the Building Code to historic buildings, the performance of the exit system from the bowl is poor, and should be improved.

Additional recommendations concerning fire resistance, sprinkler protection, fire alarm systems, exiting, and separation of storage uses have been included.

BUILDING CODES ENFORCED

The building and construction of the Rose Bowl is regulated by Title 24, California Building Code, 2001 Edition.

Because the building is on the National Historical Register, the California Historical Building Code applies. The California Building Code regulates new construction. The Historical Building Code regulates use and occupancy, fire protection, means of egress, accessibility, and structural components in historical buildings. The Historical Building Code refers to the regular building code in addressing requirements for new construction, however, allows alternate approaches when application of the Building Code rules will harm the historic character or elements of the building.

Building Codes recognize that allowing the use of historical structures is important and valuable to society. Building Code rules change as time passes, making it difficult or impractical for old buildings to be brought into compliance with current codes. This non-compliance does not necessarily equate to a lack of safety and the California Historical Building Code recognizes this. The Historical Building Code allows an alternate set of requirements which are sensitive to the building's nature and allow the historic characteristics to be maintained.

A similar analogy exists today considering the safety equipment found in cars. New cars must be provided with seat belts, shoulder harnesses, and air bags. Older cars may have only seat belts and shoulder harnesses or may only be provided with seat belts. Antique cars, such as Model T Fords, don't even have seat belts. Society allows such older cars to be used, without requiring the retrofitting of air bags, shoulder harnesses, and seat belts because their use is seen as valuable. Society doesn't require everyone to buy a new car every time a new safety improvement is implemented.

The code's perspective is that buildings, which were built in accordance with the code at the time they were built, are considered safe and any future work done in accordance with current standards makes the building safer. In the case of historic buildings, if making the building safer will destroy the character of the historic elements, the historic code allows the original safe nature to remain.

USE AND OCCUPANCY

The Rose Bowl is an approximately 90,000 seat outdoor stadium classified by the California Building Code as a use Group A, Division 4 occupancy. Additional uses include office (use Group B), concession and toilets (which are considered part of the A-4 use), locker rooms (part of the A-4 use), and storage areas (use Group S-1).

Existing and new occupancy uses are required to be separated from the stadium as follows:

- Offices – No separation is required unless the offices exceed 25% of the floor area of the stadium. If so, then a 1-hour separation is required.
- Storage areas – 1-hour separation
- Locker rooms, concessions, toilets – no separation – considered part of A-4

The Building Code requires all storage rooms to be separated even if the materials stored have a low fire hazard. This is because the contents will change over time. As an example, paint storage may change from water based to oil based and back. The code anticipates this variety of uses and requires all storage areas to be rated.

During the building tour, it was noted that the various storage rooms are not provided with 1-hour occupancy separations. These rooms include the paint storage area underneath the south grandstands, and the storage and electrical transformer areas adjacent to the locker rooms under the south stands.

This 1-hour fire resistive separation may be accomplished by one layer of 5/8" thick gypsum board on each side of a steel stud wall, or by using a minimum 4" thick masonry block wall. A 1-hour fire resistive lid can be provided using a wide variety of UL listed assemblies, including concrete planks, metal deck with dropped ceilings, or spray on fire proofing.

Section 8-302.3 of the California Historical Building Code requires storage areas to be provided with 1-hour fire resistive separations, but allows 1-hour occupancy separations to be omitted when the building is provided with a sprinkler system throughout. The building is not provided with a sprinkler system throughout. The Historical Building Code requires either 1-hour occupancy separations or sprinklers to be provided to address storage uses in the stadium.

CONSTRUCTION TYPE

The stadium is constructed primarily of concrete and steel construction. The exposed steel requires the building to be considered non fire-resistive. Table 6-A of the California Building Code would consider the Rose Bowl of Type II-N construction, non-combustible, non-fire-resistive-rated construction. It should be noted that some wood elements within the Stadium were noted during the walk through, including the old locker rooms adjacent to the field tunnels, the current locker rooms, and enclosure walls for the transformers and adjacent storage rooms under the south stands. This wood construction is not permitted within Type II-N buildings; however, because of its relative minor occurrences in comparison with the remainder of the facility, the building is being considered an existing Type II-N building rather than a Type-V (combustible wood) construction.

The Building Code regulates building height and area in order to limit the amount of combustible materials within a building, or part of a building. Generally speaking, the larger the building the more fire-resistive it is required to be. Because of its size and height, the California Building Code would require a new Rose Bowl to be of Type I-FR construction. This type of construction requires 3-hour rated structural frame, 2-hour rated floors, and 1-1/2-hour rated roof. Any new additions at the Rose Bowl should comply with this type of classification.

The California Historical Building Code addresses the maximum floor area and maximum height of existing historical buildings. Section 8-302.4 requires multi-story historical buildings to be in accordance with the regular building code. The Building Code would require the Rose Bowl to be provided with a 3-hour rated structural frame, 2-hour rated floors, and 1-1/2-hour rated roof to comply with the code. An exception to Section 8-302.4 allows historical buildings with sprinkler systems to be unlimited in floor area without fire-resistive area separation walls. Providing sprinklers in the Rose Bowl would allow the existing non-rated construction.

Building height is also regulated. The current construction type of Type II-N would allow a maximum one-story, 55 foot high stadium. The Historical Building Code also addresses allowable height. Section 8-302.4.5 allows the height and number of stories of a historical building to be unlimited if the height and number of stories do not exceed its designated historical design. In other words, additions to the stadium could not be made which would make it taller than its current configuration unless the stadium was of Type I fire-resistive construction. In its current configuration of non-rated construction, any additions are not permitted which will result in an increase to the height or number of stories of the stadium.

FIRE PROTECTION

Fire-Resistive Construction – Exterior Walls

The Building Code also regulates the fire resistance of exterior walls of buildings based upon distance to property lines. Because the building is greater than 40 feet to the property line, exterior walls are permitted to be non-rated.

Fire Alarm Systems

Section 8-409 requires fire alarm systems in historical buildings when they are required by the building or fire codes. Section 904.3.2 of the Building Code requires sprinkler systems to notify building occupants. The press box is provided with sprinklers and a fire alarm; however, alarm notification does not extend throughout the remainder of the stadium. The California Fire Code, Section 1006.2.2.2, requires fire alarms in occupancies greater than 1,000 occupants to be a voice alarm type.

Any new construction will be required to be provided with a fire alarm system. Consideration in the Master Plan should be given to providing fire alarm messaging in the bowl and Plaza areas through the PA system, either automatically or manually during an event.

Automatic Sprinkler Systems

The Historical Building Code, Section 8-410.1 allows sprinkler systems to be used to offset non-conforming construction type. The stadium was noted as being non-combustible, non-rated construction and exceeds the allowable height and area permitted by the Building Code. Providing sprinklers throughout the stadium would offset the existing non-conforming construction and could be used to justify increases in area caused by Master Plan projects. It should be noted that the Historical Building Code allows alternate life safety systems to be approved in lieu of sprinkler systems. There are opportunities to review the outdoor stadium physical separation and open air condition to allow some toilet and concession stand facilities to remain non-sprinklered.

This section does not permit sprinklers to be used to address deficiencies in number of exits and requires sprinklers in all detention facilities. While technically not a detention facility, any spaces containing holding rooms used during events for unruly or drunken patrons should be provided with sprinklers.

EXITING

Similar to other historical provisions, the basic requirement for exiting is that all exits are made to conform to the regular building and fire code requirements. Only when the historical character and nature of the project are adversely affected can alternates be considered. California Historic Building Code Section 8-502 provides alternate allowances to code compliant exit conditions. Exception 3 allows reasonable exceptions as long as they do not adversely affect the intent of life safety. Exception 5 also allows non-conformance of existing exiting if other conditions allow patrons to quickly and safely evacuate any portion of a building without undue exposure. These two provisions allow alternate arrangement of exit systems, as long as no undue exposure exists.

Emergency Exiting

The Stadium emergency exit plan considers the upper bowl population exiting via the bowl vomitories, and the lower bowl population exiting to the field and out the field tunnels.

Upper Bowl

The upper bowl population of approximately 62,000 people exits via 28 vomitories seven feet in width. The vomitories have a calculated exit capacity of 53,312 people, or 86% capacity considering today's code requirements using smoke protected assembly exit factors.

Lower Bowl

The lower bowl population of approximately 30,000 people exits via 36 field access points which provide a calculated exit capacity of 23,734 people or 80% capacity considering today's code requirements using smoke protected assembly exit factors.

The four field exits provide an exit capacity of 16,818 people or 57% of the lower bowl population using them.

Although the emergency plan proposes to split the exit routes in the bowl, this plan has never been implemented. It is anticipated that many people in the Lower Bowl will attempt to move up into the vomitory, rather than move onto the field. This will result in exit performance which represents the normal circulation described below.

Normal Circulation

The stadium bowl is served by a single set of vomitories located mid bowl. Although the emergency exit plan has the upper bowl only using these vomitories, they provide essentially 100% of normal ingress and egress to and from the bowl. During normal use, approximately 91,300 bowl patrons use these elements which have a calculated exit capacity of 53,312 people or 58% capacity. This results in a calculated flow time of 22 to 27 minutes, which is 200% to 300% of contemporary standards.

A system of operational procedures to address exit issues is currently in place, developed and managed with the police, fire, and building departments, along with building operations and management personnel. These procedures include defining the exit paths during emergencies, advising the patrons of the appropriate exit route in an emergency, use of stadium security staff and ushers to direct patrons to the appropriate exit path, and coordination with an incident command center to manage crowd exit routes. The systems have been in place and are modified as new conditions arise. The building and fire departments have stated that they believe that the operational procedures (which are extensive compared to many other facilities) are adequate to address existing exit systems.

These operational procedures are necessary since the exit system provides only approximately one-half of the exit capacity of contemporary facilities. The Rose Bowl exit performance is poor and characteristic of stadiums built early in the 1900's. Similar facilities include the Los Angeles Coliseum and the University of Michigan, both of which have similar bowl egress systems.

Exit system modifications which have been considered as part of the Master Plan exercise include providing additional tunnels through the bowl, providing additional tunnels from the field to the concourse (which allow people to exit off of the field through more than just the four field tunnels), and providing a new concourse on the back of the upper deck. It is FP&C Consultants' opinion that providing a new exit pathway at the top of the upper bowl can be effective only if the crowd is trained (or forced by aisle design) to travel up first to go out. This, in combination with requiring upper deck patrons to use any proposed new exits to access their seats, would assist in maximizing the effectiveness of this approach.

Because the exit performance of the bowl exiting system is so poor, we strongly encourage the Rose Bowl to pursue improvements in the exit system.

Vomitory Tunnel Configuration

The Rose Bowl provides access to the seating area via 28 tunnels which average over 75 feet in length. Although the tunnel length is not regulated by the code, the relatively long and narrow configuration creates exit concerns, especially if a queue develops in the tunnel. The tunnels have the potential to develop over crowded conditions behind a queue due to people continuing to move forward behind the stoppage. This results in increased population density and potential injury to patrons. The phenomenon cannot be eliminated without restricting the number of people in the tunnel. This condition is reported to occur during events, and operational procedures have been put in place, which suspend tunnel traffic during periods of heavy use. This addresses the issue but results in delays in exiting or entering the bowl.

Exterior Gates

Exterior exit gates from the concourse are well distributed around the stadium and provide a calculated exit capacity of 114,600 people or 126% of the bowl population.

Concourse

The concourse serves as circulation space for the stadium occupants and contains approximately 330,000 square feet. This provides a little over 3-1/2 square feet per person in a full house event if everyone desired to circulate on the concourse. This density, which does not include the areas lost due to portable concessions, allows standing room, with little space for free circulation. The population on the concourse varies during an event, with fewer people in the concourse during a game and more people entering during half-time and before and after the event.

The vomitory tunnels are the restriction in the exit system, not the concourse. The concourse has areas on the northeast corner and west sideline which are reduced to less than 50 feet in width which restricts flow around the stadium. With the portable concessions in place, circulation on the concourse is worse. To improve circulation, a wider concourse width is recommended. The portable concession locations are required to be limited to comply with the Building Code requirements for exit widths.

ACCESSIBILITY

The Historical Building Code allows historical buildings to maintain their integrity while still providing access to and use by persons with disabilities. This is done by allowing reasonably equivalent alternatives to regular accessibility provisions to be accepted in historical buildings.

The Historical Building Code requires compliance with California Accessibility Requirements unless strict compliance threatens or destroys the historical significance or character defining features of the stadium.

Alternative approaches are required to be dealt with individually. They are required to address the preferred alternatives found in the Historical Building Code and are required to be documented.

The Historical Building Code addresses five specific subjects and lists, by order of priority, a preferred alternative for each one as follows:

1. An accessible entrance is required. This may be any entrance used by the general public which is no further than 200 feet from the primary entrance or access to an accessible entrance not used by the general public is permitted if it is open and unlocked with directional signs and no further than 200 feet from the primary entrance.
2. Doors – In order of priority, doors which can not comply with the accessibility code as follows:
 - Single leaf door, minimum 30 inches clear
 - Single leaf door, minimum 29-1/2 inches clear
 - Double doors with one leaf, minimum 29-1/2 inches clear
 - Double doors with a power assist device and both doors opening providing a minimum 29-1/2 inches clear
3. Power assist doors may be considered equivalent to level landings, strike side clearance, and door opening forces of the accessibility requirements.
4. Accessible unisex toilets are permitted in lieu of separate gender toilet facilities when acceptable separate gender facilities can not be provided.
5. Ramps and lifts are permitted in the following priority:
 - Maximum one in ten slope for a horizontal not exceeding 12 feet. Signs are required to be posted indicating its steepness.
 - Maximum one in six slope for a maximum 13 inches horizontal. Signs are required to be posted to indicate steepness.
 - Access to experiences, services, functions, materials, and resources at accessible levels using maps, plans, videos, virtual reality and other related equipment.

Equivalent Facilitation

The Historical Building Code allows equivalent facilitation to be used when the accessibility provisions would threaten or destroy the historical significance or character defining features of the building or site or cause unreasonable hardship. These alternatives must be applied individually, must provide substantial equivalent or greater accessibility and usability, and the approach is required to be documented.

If the historical significance or character defining features are threatened or destroyed by any applicable provisions, including the alternatives, an exception from the requirements is permitted on an individual basis, equal services are provided in an accessible location, and these services are equivalent to those provided in the non-accessible location and the approach is documented.

Access issues including the number of accessible seats provided are permitted to be addressed on an item by item basis.

STRUCTURAL REQUIREMENTS

Non historical additions and alterations which are structurally separated from the existing historical structure are required to comply with the new code requirements. Any new additions, which are not structurally independent from the existing stadium, are not permitted to affect the structural loading unless it is evaluated in compliance with current code requirements. Any work affecting the structure will require the gravity load path to be evaluated and the wind and seismic loads to be evaluated. Any deficiencies are required to meet the requirements of the Historical Building Code. Section 8-706.1 addresses lateral load requirements which are described as 75% of the seismic forces found in the 1995 Edition of the California Building Code. Any Master Plan work should be structurally independent of the existing stadium to avoid potential upgrades to the existing structure.

MECHANICAL, PLUMBING, AND ELECTRICAL REQUIREMENTS

A review of existing mechanical, electrical, and plumbing system conditions has not been conducted.

Chapters 8-9 of the Historical Building Code addresses mechanical, plumbing, and electrical requirements. Consistent with other Historical Building Code provisions, all new work and new equipment is required to comply with new code requirements. Existing mechanical equipment may be permitted to remain as long as it is not deemed a safety hazard. Existing grease hoods and associated exhaust ducts are required to be altered in conformance with the regular building code requirements.

The plumbing provisions require plumbing to be connected to an adequate drainage and vent system. If the plumbing systems do not comply with the current California plumbing provisions, operational tests may be required. Vents may terminate in any location which is not deemed a safety hazard. Similar provisions are included for indirect and special waste traps and interceptors, joints, and connections. Plumbing fixtures are required to be connected to an adequate water supply. New building sewers are required to comply with the Building Code.

The number of men's and women's water closets and men's urinals complies with the Plumbing Code. The number of lavatories provided for women complies and the number for men's lavatories is 86% of the requirement.

Electrical

Electrical wiring methods which are not deemed a safety hazard may remain. Load calculation services and lighting loads may be based on actual loads rather than the watts per square foot method, and existing loads may be based on maximum demand recordings in lieu of calculations as long as the recordings are provided by the electrical company, maximum demand data is provided over a one year period, there were no changes in the load characteristics over the last year, and the anticipated load does not change, or the existing load plus 25% does not exceed the amp capacity of the feeder service.

RECOMMENDATIONS

1. Exit systems do not comply with the code requirements for capacity, primarily out of the bowl. The Historical Code allows a lack of capacity to remain, as long as safe conditions are maintained. The operational procedures in place to manage exit and crowd movement issues should remain in place and be re-evaluated as conditions change.

Normal circulation is poor when compared to contemporary design. The only observed relatively simple enhancement to the current exit system is the widening of the north field tunnel entrances to the full width of the tunnel. Master Plan efforts should reduce the occupant load using the tunnel, which may include providing alternate paths into and out of the stadium.

2. Separation of Storage and Other High Hazard Occupancies - The Building Code requires storage and electrical rooms containing transformers to be separated by 1-hour fire resistive construction. The paint storage under the south stands and storage rooms near the locker room are not separated from the adjacent areas. A 1-hour separation should be provided. As an alternate, the Historical Code will allow the non-separated use if the building is provided with a sprinkler system.

3. Exit Illumination – Exit lighting in the bowl and concourse should be confirmed to provide a minimum of one footcandle in the extent of normal lighting and emergency lighting in the event of a power outage.

4. Sprinkler System - Providing a sprinkler system in all enclosed areas is a practical way to obtain significant improvements in fire and life safety at the Rose Bowl. In addition, it will allow the non-rated steel construction and unseparated storage practices which are currently occurring. The Master Plan design approach should include sprinklers in all new work and consider installing sprinklers in all enclosed portions of the Rose Bowl.

5. Construction Type - The Historical Code requires the non-fire-resistance-rated portions (exposed structural steel) of the Rose Bowl to be of 3-hour fire resistance. As an alternate, the building could be provided with sprinklers and have the non-fire-resistance-rated portions remain. The Master Plan should include all new construction to be of Type I-FR construction (3-hour rated structural frame, 2-hour rated floors, and 1-1/2-hour rated roof).

6. Fire Alarm – A voice alarm system is required in new stadiums. The Historical Code does not consider the installation of an alarm system as damaging to the historical nature of a building. The PA system is currently used to provide fire alarm messages to the bowl patrons, but it does not extend to the concourse or other spaces.

The PA system should be provided with an emergency power supply.

The press box is provided with a fire alarm system. We recommend the Master Plan extend the PA coverage to the concourse so patrons may be directed to stay out of the bowl, move away from a fire area, or exit the stadium.

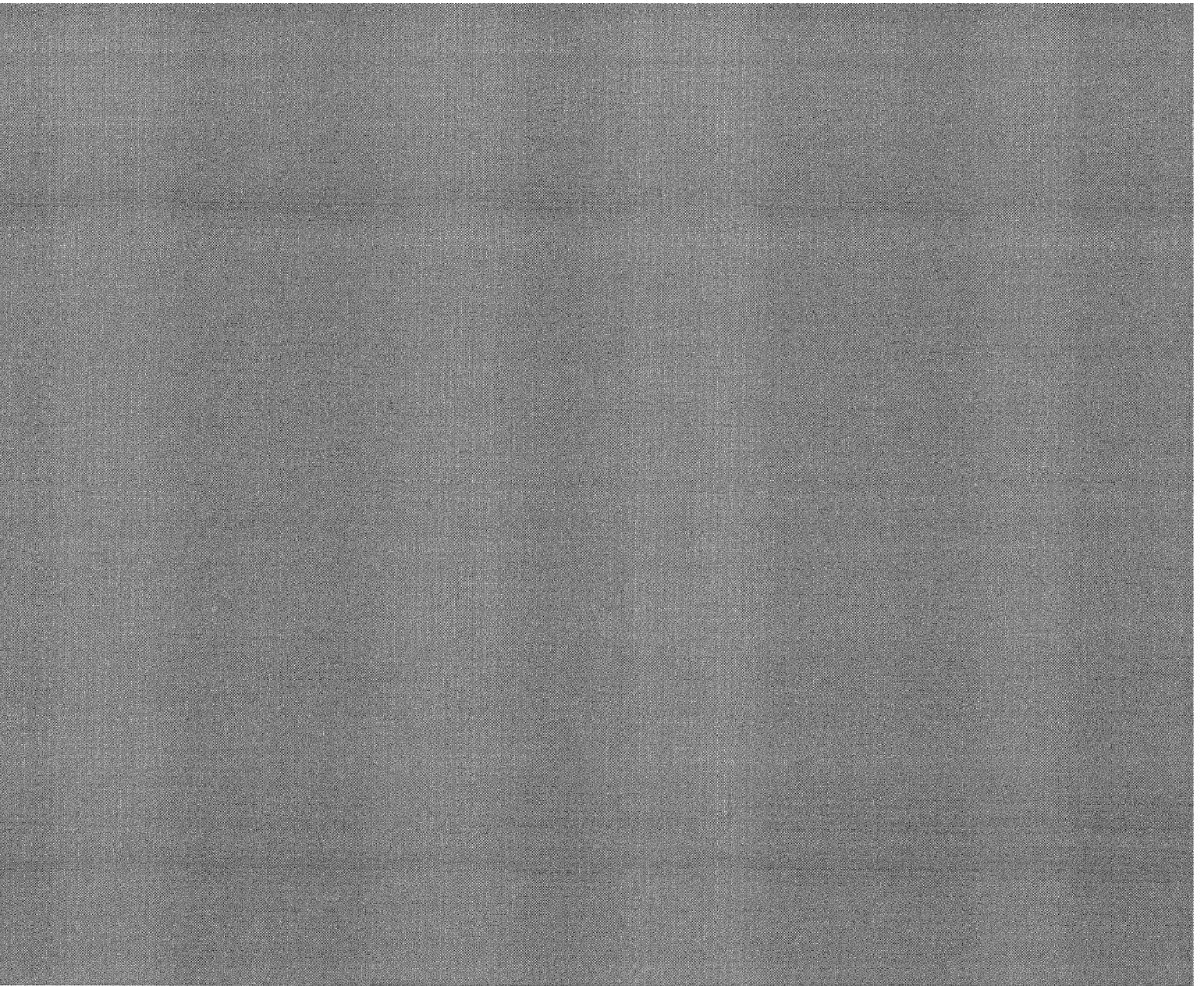
CONCLUSION

The Rose Bowl's unique configuration and historical designation provides both benefits and disadvantages. While it holds a special place in American sports and architectural history, significant changes to the building are difficult, if not impractical, to implement.

The current configuration can be considered to be in substantial compliance with the California Building Code, with the notable exception of a sprinkler and fire alarm system.

The exit system, which is poor and does not provide the same level of service as a contemporary facility, is being managed by operational procedures which control occupant movement using stadium personnel to direct occupant use of vomitories and bowl during periods of high use. FP&C Consultants strongly recommends that exit systems be improved. The Master Plan proposal to provide a new circulation route at the back of the bowl can greatly enhance the bowl circulation.

Master Plan efforts should provide additional exiting opportunities and include provisions to install sprinklers and a fire alarm system.



MEP

mechanical electrical plumbing

I. DIVISION 16 – ELECTRICAL DISTRIBUTION SYSTEMS

A. Applicable Codes and Standards

1. The electrical systems for the Rose Bowl Master Plan shall meet or exceed the following codes and standards:
 - a. NFPA National Fire Protection Codes.
 - b. UFC - Uniform Fire Code.
 - c. CEC - California Electric Code.
 - d. IES - Illuminating Engineers Society.
 - e. NEMA - National Electrical Manufacturer's Association.
 - f. OSHA - Occupational Safety and Health Act.
 - g. City of Pasadena Codes.

B. Existing Electrical Systems Description

The Rose Bowl is fed by a dedicated 4.16kV feeder (feeder B-6) from the City of Pasadena, Brookside substation. The main service feeders from the utility substation to the Rose Bowl utility vault are 500MCM Aluminum triplex cables and are sized for a capacity of 475A at 4.16kV. A second, back-up feeder (feeder B-7) from the same substation provides a redundant path in case of failure of the preferred feeder. This back-up feeder is not dedicated to the Rose Bowl.

The service feeders are routed in (2) 4-inch conduit to a utility vault located under the south side of the stadium. The existing main switchgear is the original equipment and is located at the main electrical room also under the south side of the stadium. Two redundant 350MCM, 4.16kV aluminum feeders (305A rated) distribute power throughout the facility. These feeders radiate from each side of the main electrical room. They run exposed (pendant mounted) under the south portion of the stadium and then underground serving pad mounted transformers throughout the site.

The location of the main electrical room and condition of the existing electrical equipment (original and nearing their useful life) make expansion and upgrades to accommodate the master plan construction very difficult if not impossible. In addition, the routing of the distribution and location of transformers throughout the site appears to be haphazard. Some transformers are very visible and located within the circulation space of the concourse.

C. Proposed Electrical Systems Description

A new electrical service is recommended because of the age of the service equipment, the inconvenient location and space constraints for expansion. A new Main Electrical Service Area should be centrally located and at the perimeter of the proposed concourse. The installation of two service feeders from the power company similar to the current design should be considered and requested for added reliability.

A new loop feed system should be explored for redundancy. The new loop feed system will be located at the outer edge of the concourse but conveniently accessible for repairs and upgrades.

The proposed electrical distribution for the Master Plan will originate from the new Main Electrical Service Area. Electrical power should be distributed at a medium voltage, either 5kV or 12KV. By maintaining distribution at 5KV, newer existing pad-mounted transformers can be utilized without modification.

Medium voltage will be distributed via conduit in concrete en-

cased ductbanks with manholes as required. The concrete encased ductbank system will consist of multiple 5-inch conduits required for the installation of the cables plus spares for future. Above ground pad-mounted transformers or substations will step down the voltage to serve specific areas and buildings and will be located to be as unobtrusive as possible and screened by a solid wall or dense landscaping. Easy accessibility should be maintained for service.

The medium voltage will be stepped down to 480Y/277V, 60 hertz, grounded for fluorescent lighting, High Intensity Discharge (H.I.D.) lighting, stadium flood lights and motors, 1/2 horsepower and larger.

The 480Y/277V will be stepped down to 208Y/120V, 60 hertz, grounded for incandescent lighting, receptacles and motors, 1/3 horsepower or less.

1. Estimated Electrical Load Densities

Area	Watts/Sq. Ft.
Stadium	15.0
Office Areas	5.0
Restaurant Club	3.0
Weight Room	8.0
Dressing Rooms/Visitors Lockers	3.0
TV & Interview Rooms	15.0
Suites	4.0
Kitchens	40.0
Concessions	40.0
Press Box	15.0
Operations and Support	1.0
Concourse	3.0

2. Projected Loads

- a. Normal Service: 4,500 KVA (approximate connected)
- b. Emergency Service: 600 KVA (approximate connected)

3. Emergency Power System

- a. The stadium currently has two emergency generators. There is a 375kW Caterpillar genset installed in 1991 near the press box. The second generator is a 150kW Kohler genset located adjacent to tunnel #26 and is significantly older. The existing 150kW generator should be demolished due to its age and its impractical supplied voltage of 208/120V.
- b. A new emergency power distribution system is needed to provide emergency power throughout the site. The existing 375kW generator could be re-used and supplemented with an additional generator and paralleling gear for added capacity and redundancy. The emergency generators and related transfer switches and paralleling gear should be centrally located and separate from the normal power service equipment. Double-wall, above-ground fuel storage tanks will serve both generators. Emergency power will be distributed via conduit and wire installed in concrete ductbank through the site.
- c. The following loads will be connected to the generator:
 - 1) Fire pump.
 - 2) Fire alarm systems.
 - 3) Stadium sound system.
 - 4) Egress route lighting including Stair, Tunnel and Concourse lighting for safe exiting.
 - 5) Mechanical/electrical room lighting.
 - 6) Smoke control system AHUs and exhaust fans.

- 7) Sump pumps.
- 8) Ejector pumps.
- 9) Selected mechanical/electrical room receptacles.
- 10) Diesel-generator related auxiliaries.
- 11) Automated monitoring and control systems.
- 12) Selected elevators and their controls.
- 13) Security equipment.
- 14) Telephone equipment.

4. Lighting Systems

- a. The existing Field Lighting System is an extensive Musco system installed in 1992. The field light fixture is a 1500-watt Sports lighter product. The field lighting system consists of 5 poles each with 27 fixtures. These lights are in good working order and will remain and be augmented with new field lighting fixtures mounted on top of the press building.
- b. The new Sports/Event Lighting fixtures shall be a 277V 1500W instant re-strike metal halide luminaire with a defined NEMA pattern and glare reducing optics and reflector. Fixtures shall be controlled individually by the lighting control system.
- c. Varying Illumination levels will be required for events. These illumination levels will be achieved by preset combinations of luminaires. All values are average maintained horizontal foot-candle levels, with readings taken at 3 feet above floor. The maximum to minimum horizontal uniformity ratio shall not exceed 2:1.

Area	Foot Candles
Sports Lighting	See Separate Section
Office Areas	50
Club	20
Restaurant/Club	20
Weight Room	50
Lockers	40
Concourses	25
TV & Interview Rooms	50 <small>w/provisions for supplemental portable TV lighting</small>
Suites	20
Kitchens	75
Concessions	50
Operations and Support	50
Concourse	20

5. Lighting Control

- a. The low voltage switching system shall be microprocessor based, fully programmable expandable system, consisting of intelligent relay panels, central time clocks, programmable system switches, low voltage switches and associated wiring. Relay panels shall be located in each electrical room and interface with the BMS system. Lighting Control System shall control all stadium seating, tunnel and concourse lighting, parking lot lighting, concession and restroom lighting and maintenance areas. In addition, exterior signage lighting shall be controlled by the Lighting Control System.

D. Telecommunication Distribution System

1. The telecommunication distribution system for the Master Plan will also utilize a ductbank system with manholes. The construction of the ductbank system will follow the Master Plan phasing. The concrete encased ductbank system will consist of multiple 4-inch conduits as required to allow for the installation of the required cables to each building as well as provide spare conduit capacity. The phasing of the Master Plan may require the instal-

lation of additional conduits in the ductbank system during early phases of the work that can be extended later to serve buildings in the future phases.

2. The layout of the telecommunication ductbank system will have to be coordinated with the layout of the power ductbank system and the utility tunnel. Where possible, a combined power/telecommunication ductbank with dedicated manholes will be used.

E. Video and Broadcast Cable Distribution System

F. Fire/Life Safety System

1. The following life safety system criteria are based on our experience. The final concepts shall be approved by the local city authorities in discussion with the fire protection consultant.
2. A multiplexed addressable fire alarm system will be provided for the facility. Components of the system shall include:
 - a. Manual fire alarm pull stations.
 - b. Space and duct-mounted smoke detectors.
 - c. Space detectors in elevator lobbies for elevator recall.
 - d. Duct detectors in return ducts of air handling units.
 - e. Sprinkler water flow valves monitoring and tampers switches supervision
 - f. Audio/Visual alarm indicating appliances (strobes with speaker/horns).
 - g. Battery backup.
 - h. Emergency one-way voice communication system to permit fire alarm signals and emergency public address announcements.
 - i. Fireman's intercom system to permit two-way emergency communication between the fire command station and remote areas of the building.
 - j. Elevator recall and control.
 - k. Life Safety Fire Command Center.
 - l. Fire alarm control panel.
 - m. Graphic annunciator panel
 - n. Fan and damper control for smoke evacuation (firefighter's control panel).
 - o. Emergency elevator controls.
 - p. Master fireman's intercom station.
 - q. Control and supervision station for the emergency generator.
 - r. Control and supervision station for the fire pump.

G. Security Systems

1. Emergency power will be provided for security system.

H. Major Materials and Equipment

1. Medium voltage switchgear: Freestanding, self-supporting integral cubicles, completely bolted construction, front and rear accessible. Power-type Drawout Circuit Breakers
2. Unit substations: Medium voltage switchgear: same as above with integral oil-filled transformers.
3. Pad-mounted transformers: Oil-filled transformers.
4. Standby Power Plant: Fully automatic diesel engine generator set, outdoor weatherproof sound attenuated enclosure with sub-base fuel tank

5. Automatic Transfer Switches: Double throw, electrically operated, mechanically held
6. Low Voltage Transformers: Ventilated, dry type, 115 deg C temperature rise, copper windings
7. Switchboards: Circuit breaker type with ground fault protection on main.
8. Panelboards (Power): Copper Bus, bolt-on circuit breaker type. Maintain 50% spare breaker capacity.
9. Panelboards (Lighting): Copper Bus, bolt-on circuit breaker type. Maintain 30% spare breaker capacity.
10. Low Voltage Conductors: 600V Copper, insulation THWN/THHN
11. Medium voltage conductors: Copper, 15KV rated, single conductor, EPE insulation, shielded, PVC jacket
12. Conduits:
 - Rigid galvanized steel: High voltage service, areas subject to mechanical damage, outdoors.
 - EMT: Branch circuits in walls or protected locations.
 - RGS, PVC coated: Locations subject to damage or corrosion.
 - PVC conduit: Used in concrete encased ducts banks, only as specially required.

II. DIVISION 15 – HVAC

A. HVAC Design Criteria

1. Codes and Standards

The HVAC systems will be designed to conform, as a minimum, with the following codes and standards as required by the City of Glendale:

- a. The 2001 Uniform Building Code.
- b. The 2001 Uniform Mechanical Code.
- c. 2001 National Fire Code.
- d. City of Pasadena Building Code Amendments.
- e. City of Pasadena Fire Code Amendments.
- f. American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE).
- g. American Society for Testing and Materials (ASTM).
- h. American National Standards Institutes (ANSI).
- i. Sheet Metal and Air Conditioning Contractors National Association (SMACNA).
- j. American Society of Mechanical Engineers (ASME).
- k. Air Conditioning and Refrigeration Institute (ARI).

2. Basis of HVAC Capacity

a. Climate
 The HVAC systems design will be based on combined climatic and internal factors. The factors represent anticipated severe conditions placed on the building HVAC equipment. The HVAC design is based on meeting the outdoor conditions 99% of the time. The conditions statistically estimated to occur 0.4% of the time (over the course of hottest and most humid months), represents a frequency of 88 hours that such temperatures and humidities will be exceeded.

It must be noted that when such outside conditions exceed the outdoor design conditions, it is highly unlikely that internal cooling loads (such as having an event for a full capacity crowd and 100% power/lighting use) will simultaneously occur. To design for such conditions would be cost prohibitive.

- 1) Outdoor temperatures based on 1 % Design ASHRAE Climatic Data.
 - a) Summer (Cooling): 99° F DB, 69° F WB.
 - b) Winter Heating: 32° F DB.
- 2) Cooling tower selection will be based on 72° F WB.

3. Indoor Design Conditions

- a. Concourses:
 - 1) Summer: 78° F DB, 60% RH maximum.
 - 2) Winter: 68° F, DB.
- b. Suites, offices, ticketing, meeting rooms:
 - 1) Summer: 75° F, DB.
 - 2) Winter: 72° F, DB.
- c. Toilets, shops, concessions, kitchen:
 - 1) Cooling: 72° F, DB.
 - 2) Heating: 72° F, DB.
- d. Storage rooms, mechanical equipment rooms:
 - 1) Summer: 85° F, DB.
 - 2) Winter: 65° F, DB.
- e. Bars, concessions, restaurants (shell & core areas):
 - 1) Summer: 75° F, DB.
 - 2) Winter: 72° F, DB.

4. Design Loads for Sizing AC Systems:

- a. Population Densities:

1) Concourses	40 sq.ft./person
2) Dressing Rooms, Lockers	50 sq.ft./person
3) Meeting Rooms	10 sq. ft/person
4) Office Areas	100 sq.ft./person
5) Suites	40 sq.ft./person.
	12-18 person/suite per design
6) Training Rooms	75 sq.ft./person.
7) TV and Interview Rooms	15 sq.ft./person
- b. Electrical/Space Loads (floor power and lighting):

1) Concourses	2 W/sq.ft.
2) Office Areas	5 W/sq.ft.
3) Suites	6 W/sq.ft
4) TV and Interview Rooms	15 W/sq.ft.
5) Concessions	Generated heat exhausted

5. Noise Criteria

a. The following noise criteria is assumed at this time:

Area	
Meeting Room	NC-30
Private Suite	NC-30
Box Office	NC-35
Building Engineers Office	NC-35
Coach's Office	NC-35
First Aid Room	NC-35
Team/Arena Offices	NC-35
Offices	NC-35
Interview Room	NC-35
Players' Wives Lounge	NC-35
Press Lounge	NC-35
Security	NC-35

Trainers Office	NC-35
Working Press Room	NC-35
Concourse	NC-AC
Corridor	NC-40
Employees Break Room	NC-40
Concession	NC-40
Restaurant	NC-40
Ticket Lobby	NC-40
Toilet	NC-40
Storage	NC-45
Shops	NC-45

6. Outside Air Quantities

- a. 15 CFM/person except as reduced per ASHRAE Standard 62-1999.
- b. Carbon Dioxide (CO2) sensors are to be provided within the lounge and suite area for the reduction of outside air, thus reducing refrigeration loads.

B. Existing HVAC Systems Description

Existing HVAC systems were previously observed and recorded by Osborn Engineering Company in 2003. Majority of equipment is in fair condition per Osborne's report.

Concessions and concession offices are near their estimated service life and can be considered for replacement per Ashrae estimated service life. See appendix for Ashrae table. The service life is expected to be longer than indicated on Ashrae table due to the limited annual use of the HVAC systems. Apparently some of the concession make up air systems are disconnected from water lines and appear to require service and repair. It is recommended that a specialized service contractor will inspect concession HVAC systems and make recommendations for maintenance and replacement.

All local systems are sized for the rooms that they serve. It is expected that spare capacities for local systems will be minimal.

The new water source heat pump plant for the new locker rooms and media rooms provides a spare capacity of 60 gpm or 20 tons at the west side of the new media room. New buildings in this area can be provided with water source heat pumps up to 20 ton capacity and interconnect to this system.

1. For the new project work the following buildings are scheduled for demolition:

- a. Press Box, 14 years old systems
 - 1) Central Station air handlers w/hot water coil
 - 2) Central station air handlers w/hot water duct coils
 - 3) Package rooftop DX air conditioner/cooling only
 - 4) Package rooftop DX air conditioner/gas fired heat
 - 5) Gas fired hot water boiler
 - 6) Hot water circulating pump
 - 7) Split system heat pumps
 - 8) Various types of exhaust fans
 - 9) Controls air compressor w/air drier
- b. Elevator Equipment Room, 13 years old systems
 - 1) Package rooftop DX air conditioner/cooling only
- c. Maintenance Crew Restroom
 - 1) No equipment
- d. Concession Stands varies from 8-20 years old systems
 - 1) Rooftop Evaporative coolers
 - 2) Hood exhaust fans

- e. Public Restroom, varies from 8-20 years old systems
 - 1) Rooftop exhaust fans - 1996 and newer only
- f. Public Safety Building, 9-10 years old systems
 - 1) Package rooftop heat pumps
 - 2) Rooftop exhaust fan
- g. Concession offices, 19 years old systems
 - 1) Packaged gas-fired rooftop air conditioner
 - 2) Rooftop and wall exhaust fans

2. Some of the observed buildings and rooms will be demolished under the phase II media room construction project:

- a. Team Locker Rooms
 - 1) Through wall heat pumps
 - 2) Electric wall heaters
 - 3) Roof mounted exhaust fans
- b. Meeting Rooms
 - 1) Splitable rooftop DX air conditioner / cooling only
- c. Officials Locker Room
 - 1) Through wall air conditioner
- d. Superintendent Office,
 - 1) Package rooftop heat pump

3. The following existing building is scheduled to remain and is considered a historical building:

- a. Administration Building, 9-13 years old systems
 - 1) Package rooftop heat pump
 - 2) Toilet room exhaust fans

4. HVAC systems currently under construction under Phase I & II construction project to remain:

- a. Locker Rooms
 - 1) Central plant with cooling tower.
 - 2) Hot water boiler and pumps inside locker room building.
 - 3) Indoor water source heat pumps.
 - 4) Toilet/shower room exhaust fans.
- b. Media Center
 - 1) Water source packaged roof top heat pumps.
 - 2) Air source packaged roof top heat pumps.
 - 3) Toilet/shower room exhaust fans.
 - 4) Storage room gravity ventilation.

C. New HVAC Systems Description

1. Building Loads

- a. The total refrigeration tonnage for the building is estimated based on the gross floor areas developed for the project program.
 - 1) The cooling load is estimated at 400 tons serving the suites and press facilities area.
 - 2) A chilled water central plant will serve the building from the central plant.
- b. The heating loads for the facility is estimated to be 2,000 MBH.
- c. Total air flow requirement is estimated to be xxxxxx CFM and will be served by approximately x Air Handling Units (AHUs).

2. Central Plant Equipment

- a. Chilled water systems:
 - 1) (1) 200 ton chiller for part loads.
 - 2) (2) 200 ton chillers.
 - 3) Chiller plant indoor clear height: 18 feet.
 - 4) Three primary chilled water pumps of equal size, one with variable speed drive control.
 - 5) Three secondary chilled water pumps, each sized at 50%

- total chilled water volumetric flow capacity.
- b. Cooling towers will be located adjacent to the central plant. Approximate size of the cooling tower enclosure is xx x xx x xx feet high. Three double-cell induced draft units, of a nominal xx-ton capacity each, will be used.
 - c. The condenser water will be distributed with four pumps (one stand-by), each sized for one cooling tower capacity. Condenser water will be distributed to the central plant chillers, and service level kitchen/beer cooler equipment. The condenser water system will use a centrifugal solids separator with side-stream pump for filtration.
 - d. Hot water systems:
 - 1) Two (2) hot water boilers with a 1,000 Mwh capacity each.
 - 2) Three (3) hot water pumps (one stand-by) each size at 50% system capacity.
 - 3) Hot water system will serve domestic water requirements via a heat exchangers indicated within the plumbing documents.

3. Air Distribution Systems

a. HVAC:

- 1) Air handling units serving the will be located at the service level serving press rooms. One unit per mechanical equipment room will be located at each side. All of the air handlers will have full air-side economizer capacity. Air handler in each room will be provided with a variable speed drive for volume flow rate adjustment.
- 2) The AHUs will be semi-custom, with double walled enclosures, and will have supply fans only. Access shall be provided to each section of the air handler. Access shall be provided to the leading and trailing sides of each coil. Lights shall be provided in all sections, with a single switch located on the exterior of the unit.
- 3) Filters shall be a combination of 2" pre-filters and 12" pleated box filters.
- 4) Cooling coils air velocities shall be at or below 450 feet per minute.
- 5) Hot water and chilled water coils shall be accessible on leading and trailing sides through access sections.
- 6) Supply ductwork serving the concourse will be routed from the mechanical equipment rooms up through shafts located at the four corners of the . From the top of the shafts, the ductwork will be routed through the structural truss system and distributed over the seating . Ductwork will be internally lined to prevent condensation of stratified air within the bowl and for noise reduction.
- 7) Sound attenuators will be provided as required to meet acoustical criteria. Linear air bars will provide air distribution at the concourses.

b. Suites:

- 1) Four pipe cooling and heating fan coil units.
- 2) Suites are closed to the outside and outside air ventilation for the suites is provided by louvers.
- 3) Economizers will be implemented on all fan coil units exceeding 2500 cubic feet per minute flow and will be equipped with hot water and or chilled water coils

c. Concourses:

- 1) Toilets at this level will be ventilated with exhaust air and minimal conditioned air.

d. Service level, ticket office, administration, offices and other general use spaces:

- 1) The service level will use distributed fan coil units, zoned as required to satisfy the multiple occupants' uses. Economizers will be implemented on all fan coil units exceeding 2500 cubic feet per minute flow and will be equipped with hot water and or chilled water coils.
 - 2) At the contractor's discretion, fan coil unit zones may be combined and served with variable air volume air handling systems as long as each zone is provided the same level of control, comfort and quality.
- e. Main Kitchens, concession and Commissary:
- 1) These areas are to be fully developed, served by roof top gas electric packaged DX units capable of providing 100% make up air.
 - 2) Black steel grease exhausts will be ducted to the roof exterior, routed within a rated enclosure in its entirety.
 - 3) Dishwasher exhaust duct will be watertight and stainless steel.
 - 4) At the contractor's discretion, evaporative coolers may be provided.
- f. Equipment rooms, such as elevator machine room, IDF room, electrical room:
- 1) Fan coil units shall be provided for all other rooms. Full air-side economizers will be provided for units over 2500 cfm flow rate. Outside and relief air shall be ducted to louvers at 10 ft. above grade.

g. Truck Dock & Trash:

- 1) These areas will be exhausted at the grade level.
- 2) Enclosed trash areas will be cooled to mitigate odors.

h. Automatic Temperature Control and Energy management system:

- 1) A complete distributed digital control (DDC) system of electric—electronic automatic temperature controls, valves, dampers, sensors, alarms and control panels will be provided. Control system shall be capable of the following energy management and control functions:
 - a) Refrigeration and air handling system optimum start/stop.
 - b) Chilled and condenser water reset.
 - c) Start/stop, status and run time of all mechanical equipment.
 - d) Duty cycling/demand limiting.
 - e) Point capacity to accommodate future tenant terminal units.
 - f) Minimum 25% spare of each point type at each distributed controller location.
 - g) PC "head—end", complete with color monitor, printer, modem and interactive color graphics for all major air and water system. All head—end functions to be menu driven and accessed via a keyboard or "mouse."
 - h) Interface with lighting control, security and fire alarm systems.

III. DIVISION 15 – PLUMBING SYSTEMS

A. Existing Plumbing Systems

1. Plumbing Fixtures

- a. Plumbing fixtures throughout the facility are generally in fair working condition; 75% of the estimated service life expectancy of plumbing fixtures has been reached in some locations. Per the Condition Survey Report prepared by The Osborn Engineer-

ing Company in 2003; a major replacement of plumbing fixtures throughout the facility is expected to occur in the year 2012.

2. Sanitary Drainage Systems

- a. Sanitary Drainage within the buildings are in a fair working conditions, 4" cast iron piping located at the northwest corner of the stadium had plugged in the past and had to be routed out, constant plugging of the drainage piping may be caused due to lack of appropriate slope.

3. Domestic Water Systems

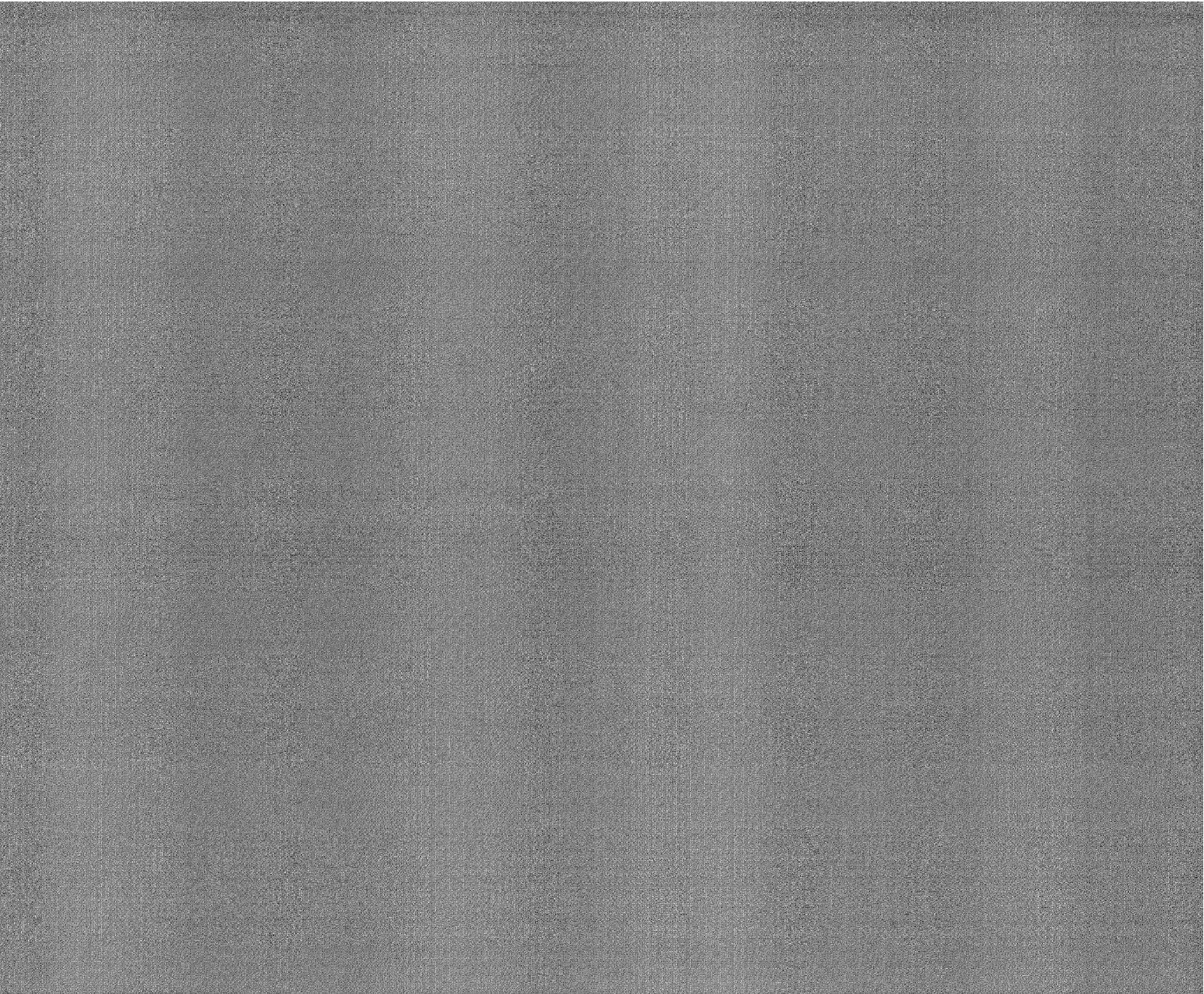
- a. Several 2" and 3" galvanized steel piping service connections to many of the perimeter buildings throughout the stadium should be replaced due to constant leaks and breaks.
- b. Service life expectancy of galvanized steel piping varies between 25 to 50 years.

4. Natural Gas Systems

- a. Medium pressure (5 psi) natural gas piping is served throughout the stadium with PVC piping, the system is serving approximately a total of 9,000 CFH throughout the entire stadium, 50% of the total load is serving 2 new buildings (Locker Room & Media Center buildings), there is approximately 7,000 CFH of spare capacity available at the 3"x2 1/2" pipe transition (northwest corner of the Media Center Building).

5. Fire Protection Systems

- a. Most of the Stadium is served by fire hydrants; wet pipe sprinkler systems are limited to press box, locker room and media center buildings, standpipe systems are limited to stairwells at the press box; chemical extinguisher systems for hoods are provided only at the concession stands.



historicpreservation

Introduction

"Maintain historic landmark status" is one of the five project objectives listed in The Rose Bowl Master Plan. Among the list of "potential improvements" addressed is "Maintains the integrity of the bowl." These are straightforward and consistent principles. Maintaining the historic landmark status of the Rose Bowl means retaining adequate historic and visual character so that the National Park Service would not find that the property no longer represents the Rose Bowl as we know it, and therefore "delists" the property from the National Register for Historic Places. For example, Chicago's Soldier Field was "delisted," losing its landmark status, after a recent major alteration that removed substantial portions of the building and added large new features to the building. Maintaining the integrity of the bowl means retaining the actual material that forms its significant features and the significant visual character that represents the site as we know it (e.g., the concrete risers, and the elliptical plan and section of the concrete risers that form the "bowl" shape).

The historic preservation element of the Master Plan addresses how the historic preservation objectives will be implemented if there is future work at the Rose Bowl. The Master Plan recognizes, as listed below, the planning and regulatory contexts at the Federal, State, and local levels that apply historic preservation values to the site and building. Historic preservation planning and standards are included as an integral and collaborative part of the design and construction process of future projects. The Rose Bowl Operating Company, through the work of the RBOC itself, staff, City of Pasadena Planning and Historic Preservation staff, and/or qualified consultants will implement the historic preservation objectives.

This historic preservation element does not evaluate or prioritize functional and safety issues at the site, nor does it evaluate proposed options for physical alterations and additions that visually demonstrate those issues and possible solutions. The performance evaluations and concepts in the Master Plan are very useful to the RBOC and the interested public in demonstrating the issues in a visual manner, and illustrating how those issues could be addressed by alterations and additions. This is a starting point for programming the future of the Rose Bowl, and for assessing options and impacts. This is not a design presentation, because there is not yet a design proposed for the Rose Bowl.

National Historic Landmark (NHL) Program

National Historic Landmarks are nationally significant historic places designated by the Secretary of the Interior because they possess exceptional value or quality in illustrating or interpreting the heritage of the United States. Today, fewer than 2,500 historic places bear this national distinction. Working with citizens throughout the nation, the National Historic Landmarks Program draws upon the expertise of National Park Service staff who work to nominate new landmarks and provide assistance to existing landmarks. Conferring with the National Park Service before undertaking any substantial additions, alterations, or removals is recommended.

Pacific West Regional Office
National Park Service
One Jackson Center
1111 Jackson Street
Suite 700
Oakland, CA 94607
(510) 817-1300

Assistance to National Historic Landmarks includes forums for communication with National Historic Landmark owners, managers and friends, technical publications and information about Federal assistance for which NHLs may qualify.

- *Federal and National Guides to Assistance*
Many Federal agencies indirectly support historic preservation. Many non-Federal programs of national scope provide assistance to stewards of historic properties.
- *Monitoring Conditions and Integrity*
The National Park Service monitors the condition of National Historic Landmarks. The latest information may be found in the online database under Search for an NHL and in the biennial updates under News in the homepage.
- *Technical Publications for Landmarks*
The National Park Service produces a wide variety of technical publications to assist the public in caring for their historic properties.
- *NHL Network Newsletter*
The National Park Service published this newsletter for stewards and friends of NHLs from 1998 through 2002. Some issues are archived in PDF format.
- *National Center for Preservation Technology and Training*
The Center provides online resources and links to research, information and educational opportunities in historic preservation.

General Plan

The City of Pasadena establishes historic preservation as a fundamental objective in its Comprehensive General Plan. The City of Pasadena Comprehensive General Plan includes two relevant policies to preserve Pasadena's historic character and environment:

1. To preserve Pasadena's character and scale, including its traditional urban design form and historic character, shall be given highest priority in the consideration of future development; and
2. To promote preservation of historically and architecturally significant buildings and revitalization of traditional neighborhoods and commercial areas.

The "Historic and Cultural Resources Element" of the City of Pasadena Comprehensive General Plan 12 of the City of Pasadena seeks to identify and protect areas, sites, and structures having architectural, historical, or cultural significance and to reaffirm their continuing value as a resource contributing to the vitality and diversity of the present.

The project objectives for historic preservation are consistent with the General Plan.

Arroyo Seco Master Plan

The Rose Bowl Stadium is recognized as a significant cultural resource in the Arroyo Seco Master Plan Environmental Impact Report.

The Rose Bowl Stadium, which is a National Historic Landmark, was designed in 1921 as a horseshoe-shaped stadium. Architect Myron

Hunt, in association with then Tournament President William Leishman, prepared the original design. Original construction conformed to the horseshoe design, but the stadium was enclosed as a full bowl in 1928, increasing spectator capacity to 76,000. The Rose Bowl has hosted the Tournament of Rose Bowl football game since 1923. The Rose Bowl has been subject to structural improvements and reconstructions throughout the operation of the facility. Construction of press box facilities in 1923, 1930, and 1961, with a comprehensive face-lift and expansion completed in 1992, construction of scoreboard structures at the north and south ends in 1930; installation of aluminum bench seats in 1969; construction of team locker rooms and adjacent multi-purpose media room under the south end of the stadium in 1973, construction of new restroom buildings and concession stands during 1981-1982; structure improvements at the south end to mitigate seismic hazards (beginning in 1982); emergency seismic mitigation following the 1994 Northridge earthquake; and the Rose Bowl Improvement Project in 1996.

In 2006 additional substantial improvements were completed that increase the strength of the Rose Bowl to resist seismic forces. In 2007, the construction is in progress for new locker rooms and press facilities to support nationally significant collegiate football events.

"The Arroyo Seco Design Guidelines would set standards to protect the natural and cultural integrity of the proposed project area, while acknowledging that it is a regional recreation facility. Throughout the community workshops undertaken for the three spatial elements of the proposed project (HMP, CAMP, and LAMP), participants expressed concerns about the potential to adversely affect the aesthetic, natural, and cultural integrity of the proposed project area due to lack of design standards. These proposed design guidelines are intended to set standards for the scope of improvements envisioned in the HMP, CAMP, and LAMP elements of the proposed project and include habitat restoration and land improvements; architecture; cultural resource preservation; recreation; signage; walls, fences, and gates; walkways, paths, and trails; parking and traffic control; public art; and site furnishings. The Design Commission would then evaluate proposed site improvements in light of the design guidelines. The Design Guidelines would require that rehabilitation or reconstruction of historic elements of the Arroyo Seco conform to the recommendations set forth in the Secretary of Interior's Guidelines." (Weeks and Grimmer, *The Secretary of the Interior's Standards for the Treatment of Historic Properties, with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings*, Washington, D.C., National Park Service, 1995), pp. 61-115.

In addition, the Preservation Briefs published by the National Park Service offer additional guidance for many issues that arise in compliance with the Standards (<http://www.cr.nps.gov/hps/tps/briefs/presbhom.htm>).

The project objectives for historic preservation are consistent with the Arroyo Seco Master Plan.

City of Pasadena Design and Historic Preservation Review

Listing in the National Register as a National Historic Landmark in no way interferes with the right to manage a property. Alterations, demolitions and relocations of buildings listed in the National Register or eligible for listing in the National Register are subject to approval of a Certificate of Appropriateness and must comply with the Secretary of the Interior's Standards for Rehabilitation.

The Secretary of the Interior's Standards for Rehabilitation

Of the four types of treatments described in the Standards for Treatment of Historic Properties, the Standards for Rehabilitation is the most appropriate for application to work at the Rose Bowl. The definition of rehabilitation applies to the need for certain buildings to adapt to changing functional demands through time in order not to become useless except as landmarks:

"Rehabilitation" is defined as "the process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values."

The Standards (Department of Interior regulations, 36 CFR 67) pertain to historic buildings of all materials, construction types, sizes, and occupancy and encompass the exterior and the interior, related landscape features and the building's site and environment as well as attached, adjacent, or related new construction. The Standards are to be applied to specific rehabilitation projects in a reasonable manner, taking into consideration economic and technical feasibility.

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural fea-

tures to protect the historic integrity of the property and its environment.

10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

If a project is found to conform to the Standards for Rehabilitation, then potential impacts are found, under the California Environmental Quality Act, to have been mitigated to a level of insignificance. If a project is found to conform to the Standards for Rehabilitation, then a finding of no adverse effect can be made under Section 106 of the National Historic Preservation Act of 1966, as amended. Guidelines for Additions to Historic Buildings

Secretary of the Interior's Guidelines for Rehabilitating Historic Buildings

Identify, Retain, and Preserve Historic Materials and Features

The character of a historic building may be defined by the form and detailing of exterior materials, such as masonry, wood, and metal; exterior features, such as roofs, porches, and windows; interior materials, such as plaster and paint; and interior features, such as moldings and stairways, room configuration and spatial relationships, as well as structural and mechanical systems.

Protect and Maintain Historic Materials and Features

After identifying those materials and features that are important and must be retained in the process of Rehabilitation work, then protecting and maintaining them are addressed.

Repair Historic Materials and Features

Next, when the physical condition of character-defining materials and features warrants additional work repairing is recommended.

Replace Deteriorated Historic Materials and Features

Following repair in the hierarchy, Rehabilitation guidance is provided for replacing an entire character-defining feature with new materials because the level of deterioration or damage of materials precludes repair.

Alterations/Additions for the New Use

Some exterior and interior alterations to a historic building are generally needed to assure its continued use, but it is most important that such alterations do not radically change, obscure, or destroy character-defining spaces, materials, features, or finishes. Alterations may include providing additional parking space on an existing historic building site; cutting new entrances or windows on secondary elevations; inserting an additional floor; installing an entirely new mechanical system; or creating an atrium or light well. Alteration may also include the selective removal of buildings or other features of the environment or building site that are intrusive and therefore detract from the overall historic character.

The construction of an exterior addition on a historic building may seem to be essential for the new use, but it is emphasized in the Re-

habilitation guidelines that such new additions should be avoided, if possible, and considered only after it is determined that those needs cannot be met by altering secondary, i.e., non character-defining interior spaces. If, after a thorough evaluation of interior solutions, an exterior addition is still judged to be the only viable alternative, it should be designed and constructed to be clearly differentiated from the historic building and so that the character-defining features are not radically changed, obscured, damaged, or destroyed.

Building Site

Recommended:

Identifying, retaining, and preserving buildings and their features as well as features of the site that are important in defining its overall historic character. Site features may include circulation systems such as walks, paths, roads, or parking; vegetation such as trees, shrubs, fields, or herbaceous plant material; landforms such as terracing, berms or grading; furnishings such as lights, fences, or benches; decorative elements such as sculpture, statuary or monuments; water features including fountains, streams, ponds, or lakes; and subsurface archeological features which are important in defining the history of the site.

Retaining the historic relationship between buildings and the landscape.

Designing new onsite parking, loading docks, or ramps when required by the new use so that they are as unobtrusive as possible and assure the preservation of the historic relationship between the building or buildings and the landscape.

Designing new exterior additions to historic buildings or adjacent new construction which is compatible with the historic character of the site and which preserves the historic relationship between the building or buildings and the landscape.

Removing non-significant buildings, additions, or site features which detract from the historic character of the site.

Not recommended:

Removing or radically changing buildings and their features or site features which are important in defining the overall historic character of the property so that, as a result, the character is diminished.

Introducing a new building or site feature that is out of scale or of an otherwise inappropriate design.

Introducing new construction onto the building site which is visually incompatible in terms of size, scale, design, materials, color, and texture; which destroys historic relationships on the site; or which damages or destroys important landscape features.

Setting (District/Neighborhood)

Recommended

Retaining the historic relationship between buildings and landscape features of the setting. For example, preserving the relationship between a town common and its adjacent historic houses, municipal buildings, historic roads, and landscape features.

Alterations/Additions for the New Use: Designing and constructing new additions to historic buildings when required by the new use. New work should be compatible with the historic character of the setting in terms of size, scale design, material, color, and texture.

Not recommended

Removing or radically changing those features of the setting which are important in defining the historic character.

Destroying the relationship between the buildings and landscape features within the setting by widening existing streets, changing landscape materials, or constructing inappropriately located new streets or parking.

Introducing a new building or landscape feature that is out of scale or otherwise inappropriate to the setting's historic character, e.g., replacing picket fencing with chain link fencing.

Introducing new construction into historic districts that is visually incompatible or that destroys historic relationships within the setting.

New Additions to Historic Buildings

Recommended

Constructing a new addition so that there is the least possible loss of historic materials and so that character-defining features are not obscured, damaged, or destroyed.

Considering the design for an attached exterior addition in terms of its relationship to the historic building as well as the historic district or neighborhood. Design for the new work may be contemporary or may reference design motifs from the historic building. In either case, it should always be clearly differentiated from the historic building and be compatible in terms of mass, materials, relationship of solids to voids, and color.

Placing a new addition on a non-character-defining elevation and limiting the size and scale in relationship to the historic building.

Not recommended

Attaching a new addition so that the character-defining features of the historic building are obscured, damaged, or destroyed.

Designing and constructing new additions that result in the diminution or loss of the historic character of the resource, including its design, materials, workmanship, location, or setting.

Designing a new addition that obscures, damages, or destroys character-defining features of the historic building.

Preservation Brief 14: New Exterior Additions to Historic Buildings, Preservation Concerns

Because a new exterior addition to a historic building can damage or destroy significant materials and can change the building's character, an addition should be considered only after it has been determined that the new use cannot be met by altering nonsignificant, or secondary, interior spaces. If the new use cannot be met in this way,

then an attached addition may be an acceptable alternative if carefully planned. A new addition should be constructed in a manner that preserves significant materials and features and preserves the historic character. Finally, an addition should be differentiated from the historic building so that the new work is not confused with what is genuinely part of the past.

When the subject of new exterior additions is introduced, however, areas of agreement usually tend to diminish. This is understandable because the subject raises some serious questions. Can a historic building be enlarged for a new use without destroying what is historically significant? And just what is significant about each particular historic building that should be preserved? Finally, what new construction is appropriate to the old building?

The National Park Service interest in new additions is simply this--a new addition to a historic building has the potential to damage and destroy significant historic material and features and to change its historic character. A new addition also has the potential to change how one perceives what is genuinely historic and thus to diminish those qualities that make the building eligible for listing in the National Register of Historic Places. Once these basic preservation issues have been addressed, all other aspects of designing and constructing a new addition to extend the useful life of the historic building rest with the creative skills of the architect.

The intent of this Brief, then, is to provide guidance to owners and developers planning additions to their historic buildings. A project involving a new addition to a historic building is considered acceptable within the framework of the National Park Service's standards if it:

1. Preserves significant historic materials and features; and
2. Preserves the historic character; and
3. Protects the historical significance by making a visual distinction between old and new.

1. Preserving Significant Historic Materials and Features

Connecting a new exterior addition always involves some degree of material loss to an external wall of a historic building and, although this is to be expected, it can be minimized. On the other hand, damage or destruction of significant materials and craftsmanship such as pressed brick, decorative marble, cast stone, terra-cotta, or architectural metal should be avoided, when possible.

Generally speaking, preservation of historic buildings is enhanced by avoiding all but minor changes to primary or "public" elevations. Historically, features that distinguish one building or a row of buildings and can be seen from the streets or sidewalks are most likely to be the significant ones. Because significant materials and features should be preserved, not damaged or hidden, the first place to consider constructing a new addition is where such material loss will be minimized. This will frequently be on a secondary side or rear elevation.

In constructing the new addition, one way to minimize overall material loss is simply to reduce the size of the new addition in relationship to the historic building. If a new addition will abut the historic

building along one elevation or wrap around a side and rear elevation, the integration of historic and new interiors may result in a high degree of loss--exterior walls as well as significant interior spaces and features. Another way to minimize loss is to limit the size and number of openings between old and new.

2. Preserving the Historic Character

The second, equally important, consideration is whether or not the new addition will preserve the resource's historic character. The historic character of each building may differ, but a methodology of establishing it remains the same. Knowing the uses and functions a building has served over time will assist in making what is essentially a physical evaluation. But while written and pictorial documentation can provide a framework for establishing the building's history, the historic character, to a large extent, is embodied in the physical aspects of the historic building itself--its shape, its materials, its features, its craftsmanship, its window arrangements, its colors, its setting, and its interiors. It is only after the historic character has been correctly identified that reasonable decisions about the extent--or limitations--of change can be made.

To meet National Park Service preservation standards, a new addition must be "compatible with the size, scale, color, material, and character" of the building to which it is attached or its particular neighborhood or district. A new addition will always change the size or actual bulk of the historic building. But an addition that bears no relationship to the proportions and massing of the historic building--in other words, one that overpowers the historic form and changes the scale will usually compromise the historic character as well. Some historic structures such as government buildings, metropolitan museums, or libraries may be so massive in size that a large-scale addition may not compromise the historic character. Yet similar expansion of smaller buildings would be dramatically out of scale. In summary, where any new addition is proposed, correctly assessing the relationship between actual size and relative scale will be a key to preserving the character of the historic building.

3. Protecting the Historical Significance Making a Visual Distinction Between Old and New

The following statement of approach could be applied equally to the preservation of districts, sites, buildings, structures, and objects of National Register significance: "A conservator works within a conservation ethic so that the integrity of the object as an historic entity is maintained. The concern is not just with the original state of the object, but the way in which it has been changed and used over the centuries. Where a new intervention must be made to save the object, either to stabilize it or to consolidate it, it is generally accepted that those interventions must be clear, obvious, and reversible. It is this same attitude to change that is relevant to conservation policies and attitudes to historic towns..."

Thus, the third consideration in planning a new addition is to be sure that it will protect those visual qualities that made the building eligible for listing in the National Register of Historic Places.

The National Park Service policy on new additions, adopted in 1967, is an outgrowth and continuation of a general philosophical approach to change first expressed by John Ruskin in England in the 1850s, formalized by William Morris in the founding of the Society for the Protection of Ancient Buildings in 1877, expanded by the

Society in 1924 and, finally, reiterated in the 1964 Venice Charter--a document that continues to be followed by 64 national committees of the International Council on Monuments and Sites (ICOMOS). The 1967 Administrative Policies for Historical Areas of the National Park System thus states, "...a modern addition should be readily distinguishable from the older work; however, the new work should be harmonious with the old in scale, proportion, materials, and color. Such additions should be as inconspicuous as possible from the public view." Similarly, the Secretary of the Interior's 1977 "Standards for Rehabilitation" call for the new work to be "compatible with the size, scale, color, material, and character of the property, neighborhood, or environment."

Conclusion

In summary, then, these are the three important preservation questions to ask when planning a new exterior addition to a historic resource:

1. Does the proposed addition preserve significant historic materials and features?
2. Does the proposed addition preserve the historic character?
3. Does the proposed addition protect the historical significance by making a visual distinction between old and new?

If the answer is YES to all three questions, then the new addition will protect significant historic materials and the historic character and, in doing so, will have satisfactorily addressed those concerns generally held to be fundamental to historic preservation.

New Exterior Additions to Historic Buildings

Preserve Significant Historic Materials and Features.

Avoid constructing an addition on a primary or other character-defining elevation to ensure preservation of significant materials and features.

Minimize loss of historic material comprising external walls and internal partitions and floor plans.

Preserve the Historic Character

Make the size, scale, massing, and proportions of the new addition compatible with the historic building to ensure that the historic form is not expanded or changed to an unacceptable degree.

Place the new addition on an inconspicuous side or rear elevation so that the new work does not result in a radical change to the form and character of the historic building.

Consider setting an infill addition or connector back from the historic buildings wall plane so that the form of the historic building--or buildings--can be distinguished from the new work.

Set an additional story well back from the roof edge to ensure that the historic building's proportions and profile are not radically changed.

Protect the Historical Significance--Make a Visual Distinction Between Old and New

Plan the new addition in a manner that provides some differentiation

in material, color, and detailing so that the new work does not appear to be part of the historic building. The character of the historic resource should be identifiable after the addition is constructed

The Rose Bowl Historic Structure Report & Preservation Plan

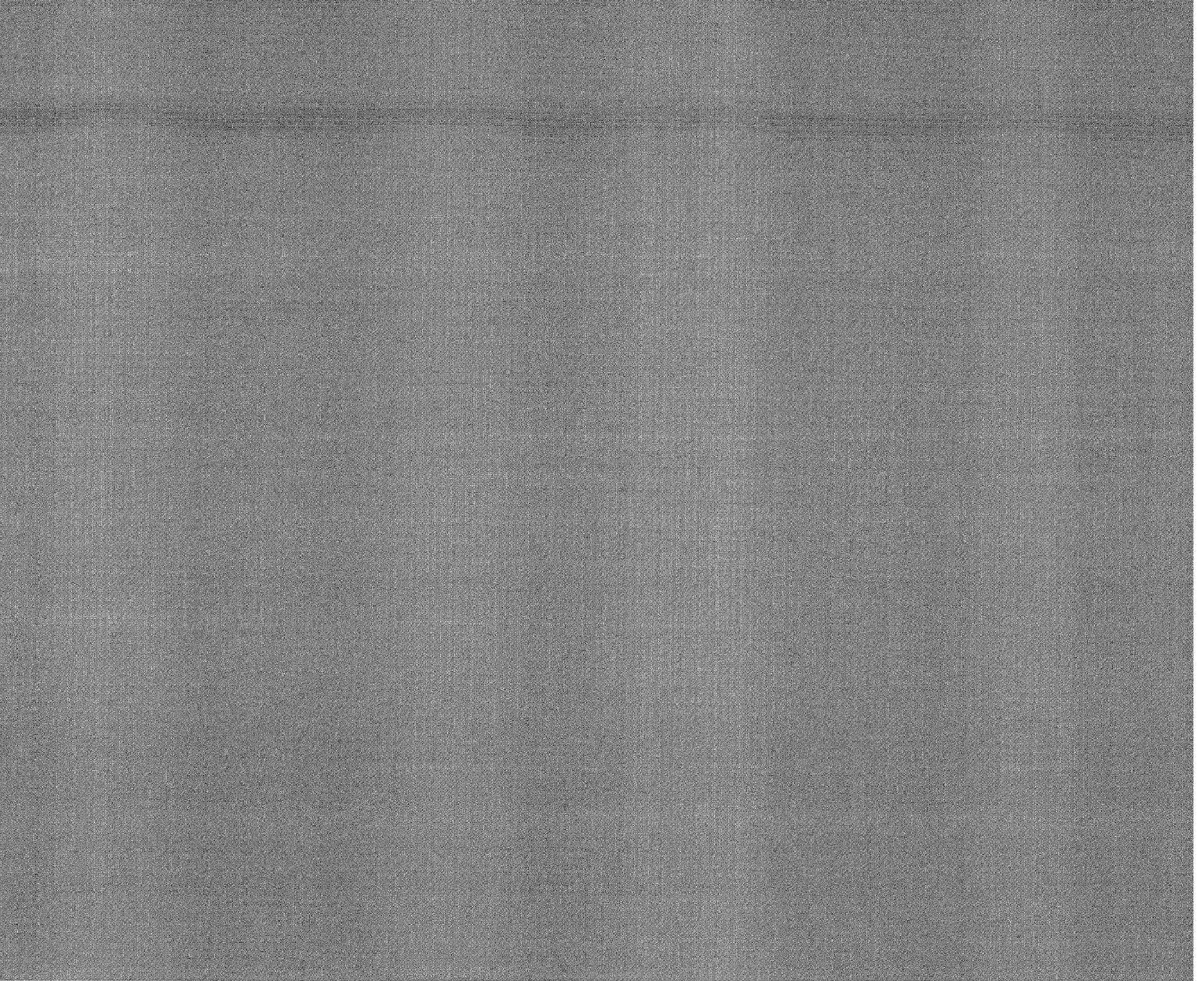
This document was completed in 1997 as a mitigation measure for the 1996 Rose Bowl Improvement Project. HABS-standard photographs and narrative were also produced at that time as a mitigation measure. The Historic American Buildings Survey documentation was prepared under the review of the National Park Service's staff, accepted by their HABS staff, and is filed in the Library of Congress.

The Historic Structure Report and Preservation Plan should continue to be consulted as an accessible and useful reference to the history and significance of the Rose Bowl and its site. The document provides a narrative history of the Rose Bowl and general guidelines for the treatment of its significant materials. However, the most useful content of the report is the detailed listing of all of the parts of the building and determination of significance for each of those major components. The Rose Bowl has been altered often. Therefore, the Report provides guidance as to which features are significant in defining the character of the site. Significant features should be retained in order to retain the integrity of the Rose Bowl. Removal of non-significant features does not reduce the integrity of the Rose Bowl.

The Historic Structure Report does not provide guidelines for addition to the site and the significant buildings. Additions, even if they do not impact significant features, can adversely effect integrity through the loss of visual character of features and spaces. The Standards for Treatment of Historic Properties and Preservation Briefs offer guidance on how to design appropriate and compatible additions to historic buildings.

Alternative Building Codes and Standards

Compliance with building and safety standards is always an important concern for the users and stewards of buildings, including historic buildings. Making buildings safe in the event of earthquakes and fires is good for people, and good for protecting the integrity of the historic site. The Rose Bowl qualifies for the application of alternative codes and standards that are available for historic structures. The objective of these alternatives is to provide for essential safety and accessibility while providing prescriptive or performance options that may help in retaining integrity while making improvements. These include the California Historical Building Code (CHBC), and the special provisions for historic buildings in the Americans with Disabilities Act. CHBC is a part of the California State Building Code; its application is mandatory by state and local building officials, and other relevant regulators, if the applicant chooses to use it for a qualified building. One useful aspect of the CHBC is that it provides for the use of other alternative codes and standards (e.g., ICBO's Guidelines for the Rehabilitation of Existing Buildings, NFPA 909, and NFPA 914).



projectteam

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There were many entities that gathered information, designed, and contributed to the master plan process. We thank them for their effort and many hours of service. The following parties were involved throughout the process.

City of Pasadena (Owner)
Rose Bowl Operating Company (Operator)
Tournament of Roses (Tenant)
UCLA (Tenant)
HOK Sport (Architect)
Barrett Sports (Financial and Market Consultant)
Davis Langdon Adamson (Cost Estimators)
FP&C (Code and Life Safety)
Syska Hennessy (MEP)
W2 Design Inc. (Civil Engineers)

Other parties to recognize include the following:
John A. Martin and Associates (Structural Engineering)
EPT Design (Landscape Architects)
Historic Resources Group (Historic Architect)
Local Neighborhood Representatives and Community