NPS Form 10-900 (Rev. 10-90)

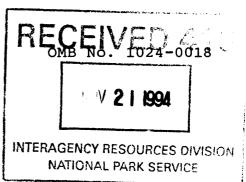
United States Department of the Interior National Park Service

NATIONAL REGISTER OF HISTORIC PLACES REGISTRATION FORM

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in How to Complete the National Register of Historic Places Registration Form (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property
1. Name of Property
2. historic name: Huntington Beach Elementary School Gymnasium and Plunge
other names/site number: (since 1967) Huntington Beach City Gymnasium & Pool
2. Location
3. Location
3. Street & number: 1600 Palm Ave.
city or town: Huntington Beach

state: California code: CA county: Orange code: 059 zip code: 92648



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3. State/Federal Agency Certification	
As the designated authority under the Na 1986, as amended, I hereby certify that determination of eligibility meets the of properties in the National Register of I and professional requirements set forth property <u>x</u> meets <u>does not meet</u> to recommend that this property be consider statewide <u>x</u> locally. (<u>See contin</u>	ational Historic Preservation Act of this <u>x</u> nomination request for documentation standards for registering Historic Places and meets the procedural in 36 CFR Part 60. In my opinion, the the National Register Criteria. I ered significant nationally
Signature of certifying official	<u> </u>
Signature of certifying official	Daté '
California Office of Historic Preservation State or Federal agency and bureau	
In my opinion, the property meets criteria. (See continuation sheet a	does not meet the National Register for additional comments.)
Signature of commenting or other officia State or Federal agency and bureau	al Date

4. National Park Service Certification	
I, hereby certify that this property is 	Edson H. Beall 12.29.94
other (explain):	Entered in the National Register
	ASignature of Keeper Date of Action

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5. Classification				
Ownership of Property (Check as many boxes as apply) private public-local public-State public-Federal				
Category of Property (Check only one box) x building(s) district site structure object				
Number of Resources within Property				
ContributingNoncontributing10buildings00sites00structures00objects10Total				
Number of contributing resources previously listed in the National Register 0				
Name of related multiple property listing (Enter "N/A" if property is not part of a multiple property listing.) N/A				
6. Function or Use				
Historic Functions (Enter categories from instructions) Cat: Recreation and Culture Sub: Sports Facility				
Current Functions (Enter categories from instructions) Cat: Recreation and Culture Sub: sports facility				

					==================
7. Description					
Late 19	Classification <u>th</u> and 20 <u>th</u> Cen sical Revival	(Enter categori ntury Revival	es from ins	structions)	
	ion: concrete asphalt	from instruction	s)		
other -	terra cotta trim				

Narrative Description (See Continuation Sheets.)

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8. Statement of Significance

Applicable National Register Criteria (Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)

- x A Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B Property is associated with the lives of persons significant in our past.
- C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
 - D Property has yielded, or is likely to yield information important in prehistory or history.

Criteria Considerations (Mark "X" in all the boxes that apply.)N/A

Areas of Significance: Education Social History

Period of Significance: 1931-1945 (no exceptional significance beyond that date)

Significant Dates:

Significant Person (Complete if Criterion B is marked above) N/A

Cultural Affiliation N/A 🚽

Architect/Builder Eley, Harry Frederick (architect) Rohrbacker, William (general contractor)

Narrative Statement of Significance (See Continuation Sheet.)

9. Major Bibliographical References				
(See Continuation Sheet for Bibliography)				
<pre>Previous documentation on file (NPS) preliminary determination of individual listing (36 CFR 67) has been requested previously listed in the National Register previously determined eligible by the National Register designated a National Historic Landmark recorded by Historic American Buildings Survey # recorded by Historic American Engineering Record # x listed on the City of Huntington Beach Historic Resources Inventory, 1986</pre>				
Primary Location of Additional Data x State Historic Preservation Office (addit'l. information on Eley and Historic Resources Inventory)				
<pre>Other State agency Federal agency X Local government University Other Name of repository: City of Huntington Beach</pre>				
10. Geographical Data				
Acreage of Property .783ac.				
UTM References (Place additional UTM references on a continuation sheet)				
Zone Easting Northing Zone Easting Northing 1 11 406 820 3725760 3				
Verbal Boundary Description (See Continuation Sheet.)				

Boundary Justification: Boundaries are stated in the 1967 Lease and Sale agreement between the Huntington Beach City Elementary School District and the City of Huntington Beach. (See continuation sheet)

11. Form Prepared By name/title: Barbara Milkovich organization: Joseph J. Milkovich & Associates date: July 15, 1994 street & number: 6032 Dundee Dr. telephone: (714) 897-9766 city or town: Huntington Beach state: CA zip code: 92647-2408 Property Owner (Complete this item at the request of the SHPO or FPO.) name: City of Huntington Beach - Community Services Department street & number: 2000 Main St. telephone: (714) 536-5495 city or town: Huntington Beach state: CA zip code: 92648 NOTE: The City owns the structure and leases the parcel under and around the building from the Huntington Beach City Elementary School District, 20451 Craimer Lane, Huntington Beach, CA. This nomination concerns only a small portion of the school site. Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 et seq.). Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Project (1024-0018), Washington, DC 20503.

USDI/NPS NRHP Registration Form Huntington Beach Elementary School Gymnasium and Orange County, California NPS Form 10-900-a (8-86) United States Department of the Interior National Park Service NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET Section _7_ Page 1 Huntington Beach Elementary School Gymnasium and Plunge. Orange County, CA

The Huntington Beach Elementary School Gymnasium and Plunge, now known as the Huntington Beach City Gym and Pool, is a handsome one and one-and-a-half story high brick and stucco neo-classical recreational facility, trimmed with white terra cotta tile. It is composed of four joined, but distinct elements. The two larger (approximately one-and-a-half story in volume) are a gymnasium on the southwest and an indoor pool (the plunge) on the northeast. Each has a high arched Lamella (truss) roof. Two flat roofed wings, one, on the northwest behind the gym, and the other on its southeast flank, house other recreational equipment and activities, locker facilities, and maintenance facilities. Eighteen skylights, invisible outside from the ground level, puncture the flat roofs, allowing natural light inside. Both the west and north elevations have large arched windows which dominate the facades. Sets of smaller louvered windows and arched recessed entrances mark the southeast and northwest elevation.

The front entrance facade (south elevation), originally brick clad with columns on either side, was remodeled in 1967. The original neoclassic portico and columns were removed and replaced by a plain stucco face. This alteration repeated the stepped parapet roof line on the Lamella roofs, and left the imposing brick and terra cotta recessed entry intact.

The rest of the building is brick, with projecting cornices at the roof line of the parapet on the east and west sides. Stepped parapets on the north and south elevations hide the roof line of the gymnasium and plunge. Although the smaller exterior windows were changed from triple hung sash windows to louvers after the historic period, and most have heavy wire screens, the original window openings remain, retaining the overall proportions. Because the only major change was the front entrance, the exterior retains its sense of time and place.¹

¹Since the alteration took place some thirty years ago, at the beginning of the population explosion in Huntington Beach, most residents do not realize that the front is not original. In fact, the first historic survey (1985) identified the structure as eligible for the National Register without recognizing that there had been a change.

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The building fronts onto Palm Ave at $16\underline{th}$ Street. It was designed to form the southwest corner of the elementary school district complex which included a primary building (grades K-3) at the southeast corner (between $14\underline{th}$ St. and $15\underline{th}$ St. along Palm Ave.), an elementary school (grades 4-8) in the north central section of the property and a separate cafeteria on the northeast ($14\underline{th}$ St.) side. Playing fields and landscaping unified the buildings.

All but the gymnasium and pool were severely damaged by the 1933 earthquake and demolished shortly thereafter. The small cafeteria, which faced onto 14<u>th</u> Street, was then rebuilt on its foundation. In 1935, the school district constructed a single large school building in the center of the site, approximately where the elementary building had been. Landscaping replaced the primary grades building. The rebuilt cafeteria was demolished in 1993 and new construction is anticipated in that location. Although a structural engineer would recognize signs of deferred maintenance problems throughout, the building appears to be in good condition to a casual observer.

<u>South elevation</u>. Two sets of wide concrete steps, the upper flanked with brick planters, lead to the Palm Ave. entrance. The main portion of the structure, which contains the gymnasium, sits slightly behind and on either side of this entrance. Stepped back and to the east is a multi purpose wing which terminates in the plunge. The narrow end of this wing is visible from Palm Ave.

When the City of Huntington Beach took possession of the structure in 1967, it removed two columns standing on either side of the south entry and the accompanying portico and cornice details. It also replaced modest piers flanking the steps with the planters. The remaining outside portion of the entry was then framed and stuccoed. The interior of the recessed entry remains intact.

The recessed entry is clad in brick with terra cotta tile trim. The interior side walls of the entry each have a recessed arch with a narrow double sash arched window above a straight double hung window. The building's corner stone is set in the west wall below the windows and its rededication plaque as a city recreational facility, is in the same location on the east wall. Within this open entry are three sets of modern double doors and windows.² The three are united with a broad white terra cotta frame which forms a square cornered border around the side doors and transoms and rises to an arch over a fanlight window opening above the central door, continuing the neo-classical style. Above the side doors are terra cotta blocks, resembling framed blank

²The original doors have been stored, awaiting an eminent restoration.

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pictures. The window in the arch of the center door section is temporarily filled in with wood, but the other two windows are probably original frosted wire mesh glass. The modern double doors have upper window panels. The ceiling has boxed beams and a small frosted square glass light fixture placed within the center box. A projecting cornice and brick course marks the roof line along the parapet. This element is repeated on other elevations of the building. The south end of the gymnasium is visible behind this front element.

Low flat roofed sections which make up the rest of the entry are banded with the same cornice treatment. These are also banded at the foundation line with white terra cotta. Each section has two narrow windows which originally were triple sash. As all other original triple sash windows in the structure, they were replaced by louvers within the original framework and covered with a wire outside screen when the City took possession. Drain pipes nestle in the corners beside the stucco entry.

To the east of the entry is a wing with two similar pair of louvered, wire screened windows and brick trim and cornice line. This entablature continues around to the south side. A sidewalk in front of the southeast wing has metal handrails and turns toward the building at that corner of the property to become a ramp walkway for handicapped access from the street.

East Elevation: This elevation was not built according to the original design, but has had few alterations since its construction. The first window, approximately forty-five inches wide by ninety inches high, originally designed as a triple sash window, was retained, but a modern wood door and concrete steps with metal railing have replaced the second window from the corner. Moving north toward the plunge from that new door are a similar pair of windows, a smaller window, and another pair of windows. A second door, about half way down the length of the side is an recessed entry with a wood door and transom. It is reached by a short stair, flanked by brick piers. Beyond the second door are three pair of louvered windows which are about two-thirds as tall as the first windows (previously described). The upper portion of the east wall of the gymnasium is visible above this portion and contains five sets of five original double sash windows each. The top pane of each is fixed, but the bottom section of each is hinged at the bottom and swings inward.

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The plunge joined this section and is recessed to the north west.³ There are two sets of small windows high on the east plunge wall. Each has a double sash window, divided vertically, a triple sash window, divided vertically and a second double sash window, also divided vertically. Below the second set is a small entry door to the plunge, added in 1933, and, at the end of the side, is a lean-to shed which houses the plunge filter system and chemicals.

North Elevation: This elevation is visible from both schools on the site, but not seen from the front or sides of the building.⁴ The dominate plunge wall echoes the roof lines of the gymnasium and front entrance and, although of smaller volume than the gymnasium, rises one-and-a-half stories from the ground. It is pierced by three large arched windows. Their lower sections are hinged at the bottom and swing inward. These let light and air into the plunge and are a dramatic element in the facade. A small door, also added in 1933, is below and to the west of the windows.

To the west of the plunge is the rear of the one story wing which houses the men's locker facilities. Windows on this side are similar to the paired ones on the east side of the structure. This portion of the north elevation has three windows to the east of a simple double door and transom window which leads into the boiler room, and a fourth single window on the west side. The section is flat roofed and has a cornice about 18 inches below the top of the parapet which continues on the western side. The large gymnasium is visible behind and beside this portion of the north wall.

<u>West Elevation:</u> Like the south elevation, this one is visible from two streets and is dramatic because of the gymnasium on the southern end. The northern portion of this elevation shares many of the same design elements with the east elevation including windows and door ways, and parapet entablatures. Reading north to south, it has two pair of windows similar to those on the east, with a small window in between. An arched recessed entry is south of these windows. Currently it is being converted to a handicapped ramp entrance. Two more slightly shorter windows are placed beyond this door, then a still smaller

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³If the plunge had been constructed to the original design which included a second pool, it would have continued the east face of the structure.

⁴Technically only Dwyer School (1935) is on the site. Agnes Smith School, built in the early 1950s, is on adjacent property behind it. The plunge, however, is visible from both locations.

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window and a second arched entry like the one on the opposite side. The door in this entry is set into the back wall of the gymnasium.

The gymnasium section features large windows and classical pilasters in a classical design. An entablature which consists of brick trim and projecting cornices run about eighteen inches below the parapet edge. Five large arched windows, approximately thirteen feet high by six feet wide, are separated by double pilasters with terra cotta caps and footings. The windows are divided by wide horizontal decorative bands of wood. Each of the windows has an upper section which contains the arch and a lower section of bottom hinged windows. Decorative brick work frames the windows. Open barred vents are cut in the foundation below each window. Terra cotta tile continues along the foundation line from the front of the building to the end of the gym. The corners of the gymnasium also have the column effect and terra cotta trim. The west side of the front wing, a one story element, has a single window. The cornice entablature is extended around it from the front, uniting the sides of the structure.

Interior.

The interior reflects high quality construction with fine tile detailing and carefully joined hardwood floors. Most of its woodwork is stained dark and highly varnished. Beautiful cabinetry, door and interior window frames replicate the Arts and Crafts feeling of the 1920s in Southern California. Light reaches the interior spaces from skylights and strategically placed transom windows. Decorative tile and marble is used lavishly in the toilet and shower rooms and in the plunge. Although the use of space has changed in some areas, the rooms are little altered since the 1933 remodeling. The interior retains much of its original charm.

Dominant are the two graceful wooden Lamella roofs, one spanning the gym floor and the other, the plunge. When the school board chose this type of roof construction, they compared the design to the Tabernacle at Salt Lake City. According to the *Kidder-Parker Architects' and Builders' Handbook*, however, the Lamella roof was a relatively new concept when the building was constructed and had been developed in Germany. Examples which the handbook suggested included the Houston Convention Center (1928) and the arena of the National Exhibition Center Company of St Louis. The roof is a barrel like arch, buttressed, in this case, by tie rods. It gets its name from the short timbers which make up the arch, forming a network of diamond-shaped panels.⁵ Fortunately, the

⁵Frank E. Kidder, Kidder-Parker Architects' and Builders' Handbook (New

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the hallway and two transom window and door sets leading to the hallway. (Fig. 15) The new outside door on the south elevation opens into this room. An inside hall connects the meeting room to the present kitchen, formerly the girl's office. The small shower stall in this short hall boasts some of the beautiful tile work scattered in the building. It has a basketweave floor of black and tan tile, and a black tile dado topped with a tan tile wall. The fixtures appear to be original.

<u>Kitchen</u>. (Fig. 16) This was originally a "girls' office." It still retains its handsome dark wood and glass front cabinets on its south side and wood faced cabinets and drawers under a countertop on the opposite side. Two large original double hung windows are over the countertop and look into the game room. Currently the room is used as a kitchen and has a refrigerator and kitchenette dining set. A door and transom window opens into the corridor from the room. To the north, at the end of the corridor is the game room.

<u>Game room</u>. Two sets of double windows on the east side let light into this centrally located room. (Fig. 17) Additional light comes from large hip ridge skylights with gable ends. Florescent light fixtures alternate with the skylights. The skylights are set in the roof, high above the ceiling. The interior walls of the skylights seem very deep because they hide an attic which houses water pipes and other utilities above the rooms. This room had been originally planned as a girls shower and locker room, but was remodelled into superintendent's office space in 1933, and eventually into an open recreation area. Presently it has pool tables and a ping pong table. The north wall is wood panelled.

Three recreation connected staff offices separate this room and the gymnasium. The original wood trim remains in all three, but has been painted. Each office also has a skylight like the ones in the game room. One office is in the room originally intended for "apparatus." It has double doors into the gymnasium. The original girls' attendants room has been partitioned into two more offices and a short hall. One of these offices has single dutch door into the game room, and the other, the smallest, has doors into the gym and into a hall leading to the plunge, girls' lockers and showers.

A short hall leads from the south side entry of the game room into the gymnasium. The girls' rest room is located on the south side of this hall. (Fig. 18) It contains gray marble toilet stalls with original painted wooden doors, and is faced with tan and black tile. The floor is basket weave, rimmed with diamonds and the walls have horizontal black or tan tile panels, similar to the design in the meeting room hall shower.

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		and P	lunge.		
		Orange County,	CA		

<u>Plunge.</u> Original drawings show two pools and boys' and girls' lockers and showers in this area. Only one pool of the proposal was built. The only obvious modification are doors on the exterior walls, which were added in 1933.

The tile work in this room is elaborate. (Fig. 19) The floor of the plunge is tile and the walls are plaster. Tile in a herring bone pattern encircles the pool itself. (Fig. 20) Two sets of tile steps lead into the water at the shallow end (south) and ladders are placed at the deep end. The piers on either side of the steps have a Greek key design which continues around the pool at the water edge. Measuring 25 x 60 ft., the heated pool was designed for the use of children and ranges in depth from $2\frac{1}{2}$ to 8 ft. The Lamella roof is still visible in the plunge, and is supported by tie rods. (Fig. 21) Light from the northern windows floods the plunge. The lower portions of these large windows can be opened for ventilation.

The girls's shower and locker room is in the southeast corner of the plunge wing. It is reached from the short hallway which connects the plunge and the game room. Although it is more utilitarian, with cement floors, it also has dressing and shower stalls of gray marble. Lockers are painted wood with solid doors. On the west side of the plunge, a similar passage way leads to gang showers for the boys and a door opens into the boys locker room. The locker room has metal lockers and a cement floor. (Fig. 22) The adjacent drying room has fine tile details. Shower room shower fixtures appear to be original.

Northwest section. This section of the structure includes the boys' locker room and showers. To the north of the locker room is a large room, originally meant for lockers. It has painted wooden window frames on the east side which once opened onto the pool, but have been blocked out from the pool side. Skylights provide natural light, and older ceiling incandescent fixtures provide additional illumination. It is currently filled with weight lifting and exercise apparatus.

North of it is the boiler room and boiler plant. Although no longer in use, an early boiler/heater is in place beside the modern equipment. This room can be reached from the outside by a pair of double doors on the north side of the structure.

West of the boiler room is a simply furnished staff lounge (designated "locker room" on the current floor plan). Directly south of it are two storage rooms. Originally these three rooms were intended for use as a boys' office and examining room. The entrance beyond them to the south is being modified for handicapped entry. (Fig. 23) On the other side of this entrance, a USDI/NPS NRHP Registration Form Huntington Beach Elementary School Gymnasium and Plunge Orange County, California Page # 16 NPS Form 10-900-a OMB No. 1024-0018 (8-86) United States Department of the Interior National Park Service NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET Section \$7 Page 9 Huntington Beach Elementary School Gymnasium and Plunge. Orange County, CA

corridor separates the present locker and shower rooms from a marble stall toilet room, an additional storage room and janitors' office. At the south end of this corridor are exterior and interior entrances to the gym floor. USDI/NPS NRHP Registration Form Huntington Beach Elementary School Gymnasium and Plunge Orange County, California Page # 17 NPS Form 10-900-a OMB No. 1024-0018 (8-86) United States Department of the Interior National Park Service NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET Section 8 Page 10 Huntington Beach Elementary School Gymnasium and Plunge. Orange County, CA

Section 8. Statement of Significance

The Huntington Beach City Gym and Pool⁶ is primarily significant for its long association with the education of the city's elementary school children. During the historic period, 1931-1945, it was the only building designed or used primarily for physical education within the school district. Secondarily, it represents efforts of local leaders to promote the growth of the community and the welfare of its residents during the first half of the twentieth century. Its 1931 construction was a positive effort to help impoverished residents endure the depression. It was also a statement of vision for the future of Huntington Beach. Its survival and utility during the period after the 1933 earthquake represented the determination of the recovering community.

Because it was built in 1931, the building was not designed to meet school earthquake standards promulgated years later. In the early 1960s, many Orange County school buildings were demolished because they could not meet those standards. The Huntington Beach Elementary School Board, however, donated the gymnasium and plunge structure to the City of Huntington Beach instead of demolishing it. It became a recreation center, serving the entire city with organized sports programs and fitness training for all ages.

Most of the community's older civic and commercial buildings have been demolished within the last decade to make way for modern structures. As a result, the historic sense of place has been seriously impacted in this ninety year old city. This beautiful gym and pool building stands as a rare reminder of the accomplishments of previous generations.

The Gymnasium and Plunge represented am unusual commitment to public education within a rural environment. While it was an progressive concept in education, it was only the latest in a series of far sighted decisions to provide quality education for children in western Orange County. Education was very important to the early settlers of the bluff that would become Huntington Beach. In 1903, a few farmers and townspeople voted to establish a school district and sell \$6,000 worth of bonds to build their first school, a four room structure. By 1916, the community had outgrown this building. Its school board built a handsome neo-classic structure, designed by John Smith of Los

⁶The City of Huntington Beach named it "gym and pool." During the historic period it was called a "gymnasium and plunge." I have tried to distinguish the "pool" as the swimming pool and the "plunge" as the room which contains the pool.

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Angeles, on a large site north of Palm Ave., between 14th and 17th Streets. This would have been adequate for the town of some sixteen hundred residents had development continued slowly.

The pace of development, however, changed drastically in 1920 when the first oil gushers signified the opening of a huge new oil field nearby. Huntington Beach swelled to about 12,000 men, women and children within a short time. Housing was at a premium; small bungalows and semi-permanent tent dwellings were erected hastily to shelter the newcomers. The one city elementary school was overwhelmed by an increase from about 275 students in 1920 to 1100 in 1923. Temporary buildings were added to handle the overflow of students until additional permanent facilities could be planned and financing secured.

By 1923, the school district coffers swelled with taxes on a rich oil field. That year the assessed valuation of the school district jumped to \$20,585,520 because of oil production, almost double the previous years value, and several thousand dollars more than that of the county seat, Santa Ana, the largest city in the County. The school district electors passed a bond issue in February of 1923 for \$250,000 to add a cafeteria (1923) and a primary grade classroom building (1924) to the Palm St. site.⁷ Like first one on the property, these were neo-classic structures.⁸

They could have built additional schools to serve children in other neighborhoods, but the Board members chose to follow the newest theory of centralized education. They planned to cluster all of their elementary school facilities on one site and bus children to the location. That way, they reasoned, they could provide more diverse educational opportunities and hire better faculty members than if they had to spread the cost over a number of

⁷There does not seem to be a picture of the cafeteria building. The minutes of the School District Board of Trustees and newspaper clippings indicate that their materials and design were similar to the John Smith structure. (School Board Minutes, 3 Nov. 1930. Huntington Beach News, 19 Feb., 1931.)

⁸The school board "motored" around the basin, looking at new schools before they chose the design and components of their new building. They finally agreed on a building similar to the school at Fair Oaks and E. Dakota Ave. in South Pasadena and hired John Smith once again to design their new school.

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locations, repeating some of the same programs on a smaller scale. Their philosophy included courses to prepare children for life outside of school if they did not attend high school. These courses, in addition to the standard curriculum included print shop, metal work, carpentry, and a complete "model home" home economics center. When the new building was finished, the school board announced the establishment of a new department -physical education- and said that it would be open to all students. The concept of a free standing gymnasium and plunge, though not mentioned at the time, obviously grew out of this philosophy of modern education.

Boom town successes do not last forever, and this community's luck was no exception. By 1929, oil exploration slacked off. Unfortunately, the Great Depression was beginning to slow the economy in other areas of employment as well. Some people left to find work and the population dropped to just over three thousand. Many of those who stayed behind, especially oil field laborers, were out of work.

By 1930, the beginning of the first historically significant period for the gymnasium, City leaders talked of finding new opportunities for laborers and getting new, non oil-related industry to locate at Huntington Beach. Most of all, they wanted to turn the town into a residential community instead of a petroleum industry site. One way to attract new residents was to improve the schools and the civic infrastructure.

Two school projects, totaling over \$150,000, were part of the effort to stimulate the labor economy and make the community more attractive.⁹ Voters also passed a bond issue for \$120,000 to repair and extend the pier. Now that the frantic oil exploration period was nearly over, the City spent nearly \$135,000 to repair damaged roads, and another \$7500 to add street lighting in a

⁹ Both the high school board and the elementary school board proposed new structures. The union high school board had built a fine high school, designed by Allison and Allison, in 1926, and they decided to add a plunge (pool) to its gymnasium in 1930. In June 1930, the elementary school board announced it would add a new free standing gymnasium and plunge with two pools to its complex.

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expanding part of town. It also added parks and golf courses. Finally, residents authorized \$30,000 of additions to the city auditorium as a memorial to the war veterans.¹⁰

Although the rest of the country was beginning to feel the effects of the depression, the elementary school district was still wealthy, with an assessed valuation in 1928-9 of \$24,481,480. It even had \$35,000 left over from the previous year's budget. Rather than float another bond issue to pay for new construction, it anticipated using this excess and additional surplus funds from the 1930-31 proposed budget.¹¹

In June of 1930, when Superintendent Baldwin announced the elementary school project, he said that because elementary school gyms were so unusual, there were not many precedents, but a "large, airy, sunny 'play room' is anticipated, where joyful health will find full sway."¹² The board was specific in some respects. They wanted Lamella roofs over the gym and plunge, marble toilets and showers, and patterned tile in the bathrooms. They also specified that the structure should match the other buildings' frame and brick. Since the central building faced onto 15th Street, and had classical columns, they wanted this one, which faced 16th Street, to compliment it.¹³

The plan for a large gymnasium and plunge was a natural outgrowth of the school board's progressive philosophy of education. Not only would it continue

¹⁰Huntington Beach News 4 December 1930 p. 4, col. 2. and Huntington Beach News 13 Aug 1931 p. 6, col. 3. Not only did these projects enhance the quality of life for those who could afford to move to the city, they provided employment for skilled and unskilled local labor. Both school districts emphasized their use of local labor. The high school project boasted that it would employ fifty or more men for fifty to sixty days. The elementary school board used the motto "Home jobs for home labor" as they chose men to landscape their new structure.

¹¹Huntington Beach News, 19 June, 1930.

¹²Huntington Beach News 30 June 1930 p. 1.

¹³Minutes of the Huntington Beach Elementary School Board, 3 November 1930.

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the central plan concept, it emphasized other new ways of thinking about physical education. Prior to the first world war, physical education had been mainly exercises in the classroom. But afterwards, educators began to see the importance of using games and sports to develop physical and mental abilities, as well as desirable social skills. As a result, the period from 1920 to 1930 saw important advances in physical education in the schools.¹⁴ The district embraced that philosophy. In fact, when the 1924 primary building was opened, students wrote about educational philosophy, saying that "It is on the playground during the physical education period that the children from the first through to the eighth grade are made better Americans, physically, mentally, and morally."¹⁵ Again in September of 1930, a student prepared another article commenting that the gymnasium and plunge were a good idea.¹⁶

Presumably the board was familiar with the work of Allison and Allison who had designed the high school and would be adding the plunge there. Nevertheless, they chose Santa Ana architect Frederick H. Eley to design their new facility. Eley had many school and public structures projects to his credit which they probably inspected in the course of their decision making.¹⁷ An Englishman by birth, he studied at Birkbeck College (London University) and came to the United States by way of Canada in 1907. He was a member of the

¹⁴Victor P. Dauer, Dynamic Physical Education for Elementary School Children, (1971).

¹⁵Huntington Beach News, 8 Feb., 1924.

¹⁶Huntington Beach News, 25 September, 1930.

¹⁷A portfolio used by Eley to show his work to prospective customers exists at the Santa Ana History Room, Santa Ana Main Library. Although many of the buildings have been demolished, their pictures reflect elements of the gymnasium's design. Among the obvious antecedents were Julia Lathrop Junior High School and Franklin School in Santa Ana. The majority of the structures, however, had tile roofs and a more Mediterranean feeling in their design. This neo classic structure was a departure from his normal work during the period.

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Royal Society of Architects, London, the Royal Architectural Institute of Canada, and was the first registered architect in Santa Ana.¹⁸

When the elementary school project was completed in August 1931, residents were proud. According to N. P. Neilson, who was chief of the health and physical education division of the State department of education, it was the best indoor facility for elementary children in the state. The newspaper went further. It averred that Huntington Beach had the only elementary school plunge in the United States.¹⁹ In fact, it said, that in California, only Taft (another oil boom town) elementary school even had a fully equipped gym.²⁰ Huntington Beach's new facility was finished just in time, because the depressed national economy was beginning to affect local revenues. During construction, the elementary school district was reputed to be the wealthiest per capita in the world. In the month of completion, however, property values plummeted to \$16,451,485 because of the drop in oil production and corresponding property value. The school board paid cash out of general funds for this building; two years later, it did not have the money to replace its earthquake ravaged schools.

In the nineteen months between its completion and the 1933 earthquake, the children of Huntington Beach and the surrounding area enjoyed the gym and pool. Physical education classes filled it during the day. Despite their concern over liability, the school board permitted the Boy Scouts to take advantage of the double court for games and the pool for recreational swimming after school hours.

¹⁸Like many others in Santa Ana's business community, Eley purchased a small orange ranch nearby and attempted to retire to it in 1921. He returned to architecture 1924, however, to do the YMCA building. According to his daughter, architecture "was a more practical way of earning a living than ranching." Local people must have admired it and his other structures because there is no indication that the school board invited proposals from anyone else.

¹⁹Huntington Beach News, 8 Oct, 1931.

²⁰Huntington Beach News, 6 Aug 1931.

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Long time physical education teacher, James P. Ranney, organized the first Junior High basketball tourney in 1932. Twelve nearby schools participated. By 1942, this tournament had become an annual affair and grown to fifty-two schools from twenty-two Southern California towns.²¹ Today's residents who attended the school fondly remember him and the numerous swimming meets and basketball tourneys he scheduled. The student body was usually quite successful in these competitions and many of the children went on to participate in high school programs. In time, the elementary school basket ball and swimming programs made possible by the facility led to even stronger high school athletic programs. Huntington Beach High School, where most of the elementary school students continued their education, became a regional athletic power. It took league championships in basketball in 1936, 1938, 1945, 1946, and 1949. Its swimmers were champions in 1937 and 1938. Students were frequently named to all California Interscholastic Foundation (CIF) squads.

In 1933 the gymnasium and plunge marked its second point of major significance in the stream of Huntington Beach history. Its role as a physical education facility was temporarily suspended to meet a local emergency. Those who lived in the Los Angeles basin during the period will never forget the night of March 10, 1933. Shortly before 6:00 p.m., a major earthquake struck the region, running diagonally through the tiny city of Huntington Beach. Both the high school and the elementary school complex were within a few miles of the epicenter and virtually on the earthquake fault. The upheaval destroyed both of the elementary school classroom buildings and severely damaged the cafeteria.²² Eley's gymnasium building, only a few yards from the others, was virtually undamaged. Only some exterior tile trim at the south entrance andbrick had come loose.23

²¹Huntington Beach News 19 Feb 1942.

²²While the board elected to demolish and replace them with one larger structure, it rebuilt the cafeteria.

²³ Frederick Eley was an unusual architect because he generally became involved in the actual construction supervision of his buildings. Probably as a result, few of the buildings he designed suffered any damage in the 1933 earthquake that devastated the coast. Sadly, however, when the rebuilding began, he did not receive commissions to restore or replace other structures,

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Huntington Beach Elementary School Gymnasium and Plunge. Orange County, CA

In the first days after the earthquake, the Superintendent, C. B. Baldwin, secured classroom space all over town for his students so that education could continue and the children could settle into a routine once again. Some classes moved to the Woman's Club, others to an oil field camp location, and still others to spare rooms at the high school. Workmen quickly repaired the damaged entrance to the gymnasium and modified the building for second through sixth grade classes. They partitioned the basketball court into several rooms and laid a floor over the pool for more, then cut new doors into the plunge room. Some marble shower stalls were removed, and a make shift superintendent's office created in the girls' locker room. For two cramped years, the middle students attended classes in the gym until the new school was finished.²⁴ In September 1935, the new elementary school (then Central Elementary School, now Dwyer School) opened to an enrollment of 741 and the gymnasium building returned to its intended use.

Before the earthquake, the Windsor Club (local substitute for the Junior Chamber of Commerce) asked to sponsor an adult program at the gym for unemployed men in addition to the after hours Boy Scout activity. The school board refused. Now in 1935, they responded positively to a similar request. Again, the Windsor Club was the sponsor. A men's athletic league began at the elementary school in November 1935. The participants paid \$1.00 to join and \$1.00 per month dues. A basketball league, sponsored by local churches, teachers and businesses, operated two nights per week, alternating with a volleyball league. Swimming was scheduled on Friday nights, and boxing or wrestling was available any evening. The only limit to participation was that no one could join who also was eligible to play for the high school programs. This activity appears to be the beginning of the adult programs that moved to the high school the following year and continued through the war years.²⁵

and, bitter, left the area shortly afterwards.

²⁴Like other school boards in Orange County, this one did not turn to Eley for the new construction, but hired Allison and Allison, instead. The gymnasium, cafeteria and single school building comprised the only elementary school complex in the community until the 1950s when a second elementary school was built behind it.

²⁵Local men could not afford the fee charged by the program at the elementary school. The high school district could continue it for free as part of their adult education program and did so once it recognized the need.

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			and Plunge.
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In retrospect, this building is a reflection of the initial critical period in the growth and development of the city of Huntington Beach. This is the only public building in the city designed by Santa Ana architect Frederick H. Eley and one of a very few of his school designs to remain standing in 1994.²⁶ It was the last of several neo-classic public buildings, including a Carnegie Library, City Hall, Public Auditorium, and three other school structures, erected in the City between 1913 and 1931. It is the only survivor of these handsome structures.

Designed and constructed in the early 1930s, the Huntington Beach Elementary School gymnasium project was part of the effort to create a residential environment in what must have been a rapidly deteriorating industrial town. It also provided critically needed employment to laborers during the Great Depression. Later, as the depression deepened, it served as a recreational gathering point for some of the same men. Miraculously, it survived the devastating 1933 Earthquake and housed classrooms until the school could be completed in 1935. After this it housed physical education classes for nearly three decades until the mid 1960s when the school abandoned its use.

The City of Huntington Beach continues to provide recreation programs for adults and children in the facility today. Because residents and visitors to Huntington Beach can see its handsome gymnasium from two major streets, it has become a landmark in the downtown area. Even those who did not grow up using it or have not done so as adults, consider it a special place with a very special meaning for Huntington Beach.

²⁶During the course of research for this building, we learned that Eley also designed the handsome George Shank craftsman house (1913) presently at 204 5th St., Huntington Beach. This house has been rehabilitated as a police substation and retained much of its external flavor and some of the fine interior details.

USDI/NPS NRHP Registration Form Huntington Beach Elementary School Gymnasium and Plunge Orange County, California Page # 26 NPS Form 10-900-a OMB No. 1024-0018 (8-86) United States Department of the Interior National Park Service NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET Section 9 Huntington Beach Elementary School Gymnasium Page 19 and Plunge. Orange County, CA 9. Major Bibliographical References Men of California, 1925/6 Blumenson, John J.-G. Identifying American Architecture. New York: W.W. Norton & Company, inc., 1981. Second Edition. Dauer, Victor P. Dynamic Physical Education for Elementary School Children (1971), passim. Frederick Eley portfolio at Santa Ana Public Library, Santa Ana History Room. Huntington Beach News various issues 1929-1933 Huntington Beach City School District Minutes of the Board of Trustees Personal file loaned by Robert Richardson, Santa Ana. Santa Ana Register Oct. 1931. Telephone interview, 15 July 1994 with former student Orville Hanson Ydeen and Assoc. City Gymnasium and Pool: Feasibility Study, 20 Jan 1993. Prepared for the City of Huntington Beach. Planning Department, City of Huntington Beach. Address Location Maps, City of Huntington Beach

NPS Form 10-900-a (8-86) United States Department of the Interior National Park Service NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET Section 10 Page Huntington Beach Elementary School Gymnasium and Plunge. Orange County, CA

Boundary Description

This property (.783 acres) has not yet been formally surveyed. A new legal description was prepared for the property at the request of the Real Estate Services Division, City of Huntington Beach in January 1994. It clearly identifies the northwest (west) and southeast (east) boundaries of the property. This new description reads: "Northwest corner begins 240 ft. southeast of the southeast corner of Palm Avenue and Seventeenth Street. From this point said property has a depth of 229± ft. and street frontage of 149± ft." The location and size of the subject property remain as they were stated in the original lease. I have outlined the approximate area on a site sketch map.

Note that the streets do not run true north and south in this portion of Huntington Beach. For simplicity's sake in the narrative, I have designated the building's sides as north, south, east and west. The true directions are marked on each map.

The Assessor's Parcel Number, shown on the original survey and this nomination as Block 1905, is stated as "APN: 023-100-05 (portion of) in the new legal description.

Boundary Justification

The Gym and Plunge structure sits in one corner of a large school site. Athletic fields are on either long side (northwest and southeast). A hard surfaced game area is to the rear of the structure, further isolating it from the other school structures on the same site. The school site does contain one other potentially eligible historic building, Dwyer School, formerly the Central Elementary School. I feel, however, that because of its association with the historic period prior to 1933, the Huntington Beach Elementary School Gymnasium and Plunge stands alone as a significant structure. It is the last remaining building designed in the style of architecture selected by the Elementary School Board during the period between 1915 and 1930. This style was not continued in the post 1933 Earthquake period. Socially, it represents the goals and vision of a oil-rich school district during the height of the oil exploration period, when money was no obstacle to fine construction. By the time Dwyer School was built in 1935, the oil revenue had declined and the Great Depression affected the local economy. This structure, while impressive, is modern in tone, reflecting the changing taste in architecture. Partially funded with funding from the state building reconstruction fund, it represents an entirely different era.

This application was prepared at the request of the City of Huntington Beach to nominate the gymnasium and pool structure which it owns, rather than an entire school site. At a later date, it may be possible to prepare a nomination for Dwyer School as well.

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List of Figures

Unless otherwise noted, photographs were taken during the period May - July, 1994 by Barbara Milkovich. Original negatives will be donated to the Huntington Beach Historical Society, 19820 Beach Blvd, Huntington Beach, CA once the application process is completed.

Photographs - Exterior

- Fig. 1 Aerial of school site, c. 1953. Photographer unknown. Original photograph at Dwyer Elementary School. Photo is looking north; horizontal street is Palm Ave.Subject is in lower left hand quarter.
- 2 South entrance, prior to August 1967 remodel. Photographer Fig. unknown. Original snapshot at the Gymnasium and Plunge. Photograph is looking north, across Palm Ave. at 16th St.
- Fig. 3 South entrance, after August 1967 remodel. Photographer unknown. Original photograph at City of Huntington Beach, Clerk's office.
- Fig. 4 South entrance, detail, 1994. Looking into south entry from steps. Note change in doors and light fixture from photograph #3.
- Fig. 5 South facade, looking from southeast corner of property. Shows handicapped entrance walkway which leads up to east side of building.
- 6 East facade, looking northwest from school grounds along Palm Fiq. Ave. Fence is dividing line between school grounds and city-leased parcel.
- Fig. 7 East facade, northern portion, including plunge. Looking west. Bike racks are on school grounds, fenced off from plunge entrance.
- 8 North facade, looking south. Photo taken from bus barns, north of Fig. gymnasium and plunge. Athletic court in foreground is on school grounds.
- Fig. 9 Northwest corner of structure, looking southeast. Shows handicapped ramp under construction in lower right quarter.
- Fig. 10 West facade, looking northeast from school grounds on west side of gymnasium and plunge.

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Fig. 11 Primary School (K-3) built 1924, demolished 1933. Photographer unknown. Postcard in Dwyer School collection. This is only known photo of the primary school. Photograph, probably taken in 1920s, looks northeast across Palm Ave. at 15th St. Palm trees still exist at location.

<u>Photographs - Interior</u>

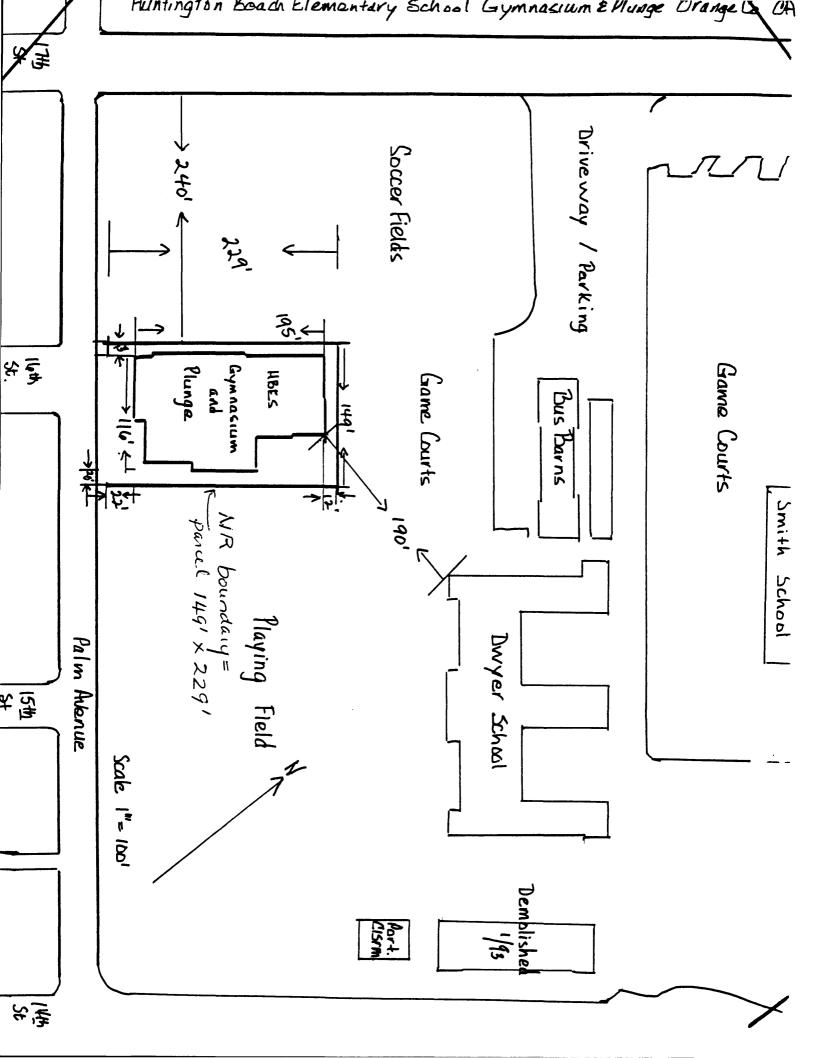
- Fig. 12 Foyer at south entrance, looking west. Gymnasium is through doors on right of photo.
- Fig. 13 Gymnasium, looking northeast from foyer into door. Note construction of Lamella roof. Metal strips which held drop ceiling will be removed shortly.
- Fig. 14 Floor detail at corner where foyer hall joins east corridor at entrance to meeting room.
- Fig. 15 Door detail in corridor, looking southwest at inside wall of corridor. Note that light from high interior windows comes from skylight in interior room. This is typical door and window treatment.
- Fig. 16 Cabinet detail in kitchen (current floor plan) along south wall. Opening at left is into short hall which leads to meeting room.
- Fig. 17 Typical skylight. This one is in game room. Photo looks up and to the east.
- Fig. 18 Original wood and marble stall in girls' toilet in short hall between gymnasium and game room. Photo looks at south side of room. This room has tile details similar to those in boys' drying area. Fixtures and hardware appear original.
- Fig. 19 Plunge, looking south. Photographer unknown. Probably taken after 1967. Original photo at City of Huntington Beach, Clerk's office. Photo looks south. Note Lamella roof and tie rods.
- Fig. 20 Tile detail, shallow end of pool at southeast corner.

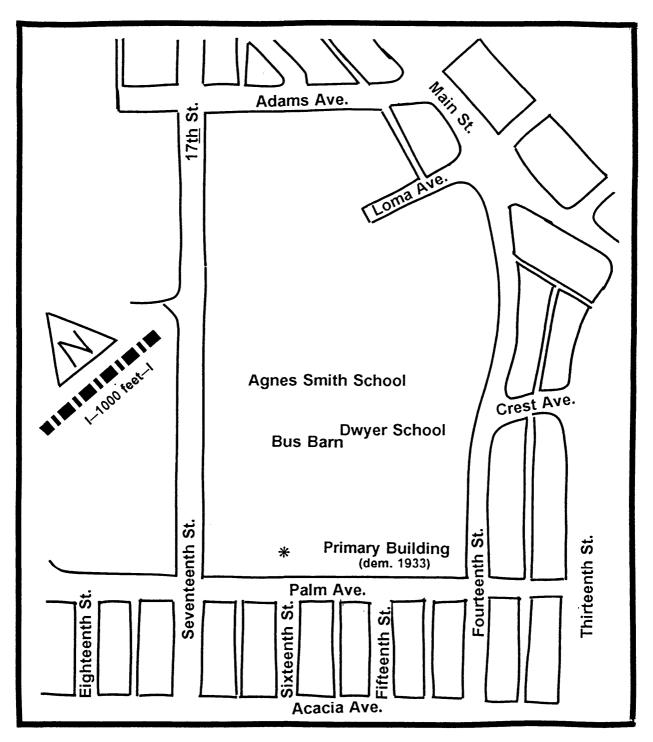
USDI/NPS NRHP Registration Form Huntington Beach Elementary School Gymnasium and Plunge Orange County, California Page # 30 NPS Form 10-900-a OMB No. 1024-0018 (8-86) United States Department of the Interior National Park Service NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET Section APPENDIX Page 23 Huntington Beach Elementary School Gymnasium and Plunge. Orange County, CA

- Fig. 21 Plunge, looking north. Photographer unknown. Probably taken in mid 1940s by a student. It is in a scrapbook at Dwyer School. Man in white shirt and tie identified as coach, James Ranney. Note different light fixtures.
- Fig. 22 Typical tile treatment (boys' drying area). Looking north from drying area.
- Fig. 23 Original fixture, Boys' toilet, looking west. Note basket weave tile pattern on floor.

Drawings, other illustrations

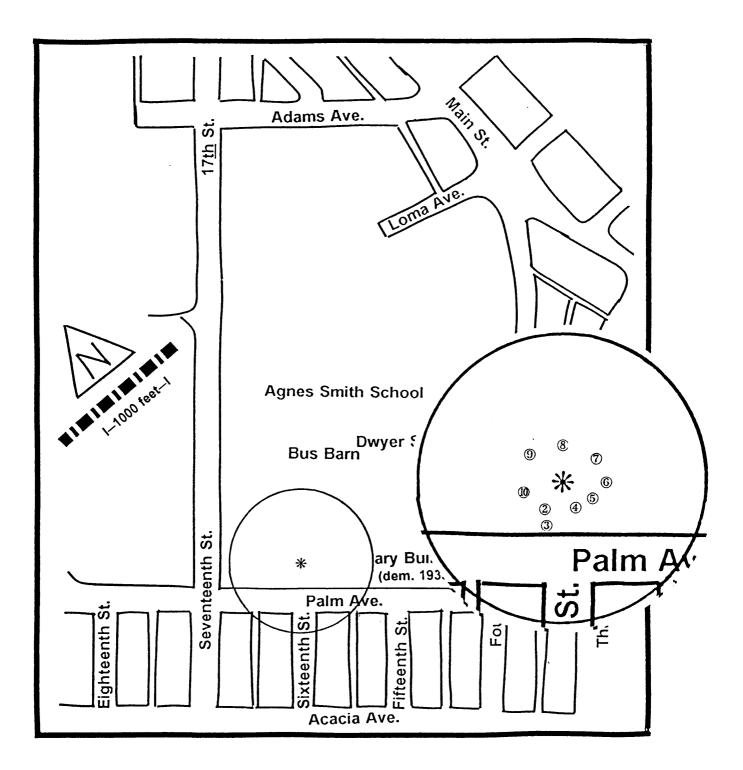
- Fig. A Site plan drawn by Milkovich from Address Location Maps, City of Huntington Beach.
- Fig. A, Blow up of sketch map showing location of exterior photographs of Gymnasium and Plunge.
- Fig. B Historic Elevation (south and north). From original drawings, in *Feasibility Study*, 1993 for City of Huntington Beach.
- Fig. C Historic Elevation (east and west). From original drawings, in *Feasibility Study*, 1993 for City of Huntington Beach.
- Fig. D Skylights over southeast section. Original photograph taken 1993 by Ydeen and Assoc. Negative in Ydeen files.
- Fig. E Skylights over southeast section. Original photograph taken 1993 by Ydeen and Assoc. Negative in Ydeen files.
- Fig. F Elementary Building, built 1916, demolished 1933. Drawing by John C. Smith published in the Huntington Beach News, 25 February 1916. View looks from the southwest of the building.
- Fig. G 1931 Floor plan (including unbuilt section). From original drawings, in *Feasibility Study*, 1993 for City of Huntington Beach.
- Fig. H 1993 Floor plan. From original drawings, in Feasibility Study, 1993 for City of Huntington Beach.
- Fig. I Diagram of Lamella Roof structure (Kidder-Parker Architects' and Builders' Handbook, p. 1280-81).





* Huntington Beach Elementary School Gymnasium and Plunge

Fig. A Site plan



* Huntington Beach Elementary School Gymnasium and Plunge



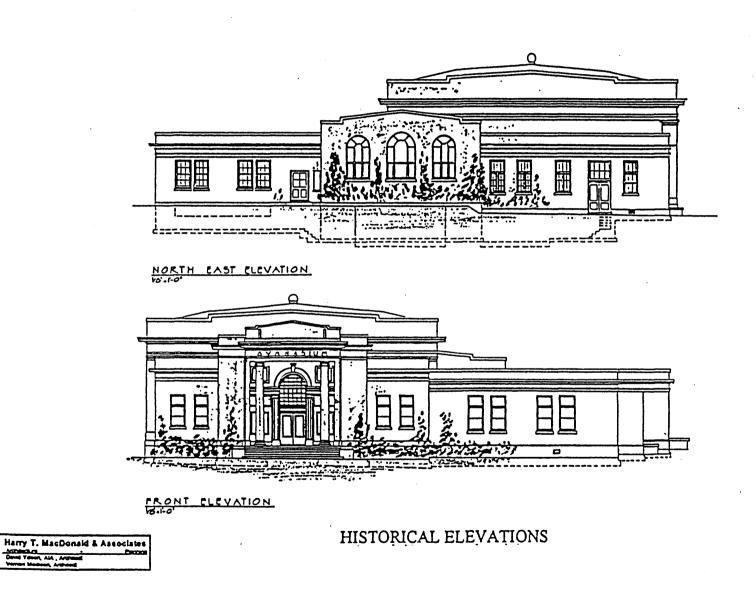


Fig. B Historic Elevation (south and north)

PLATE 1

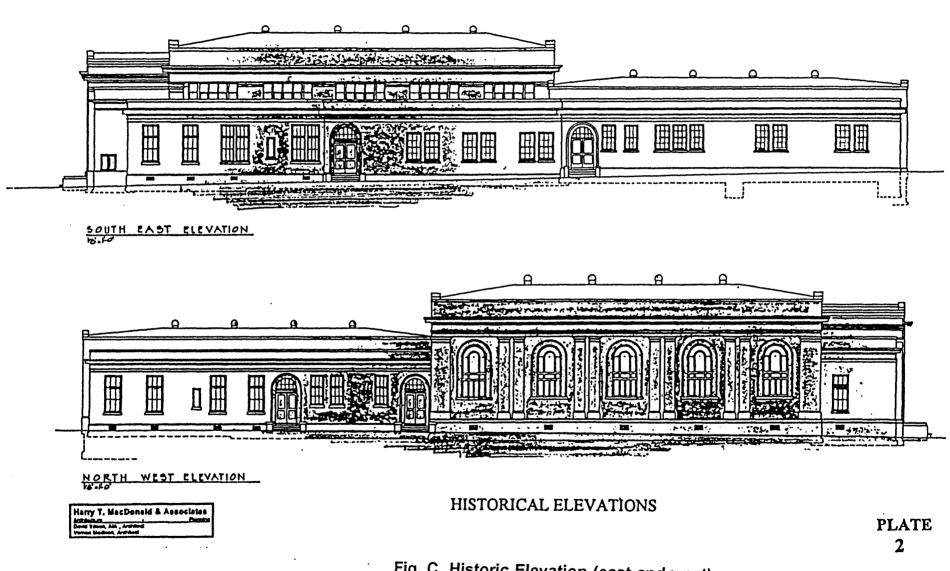
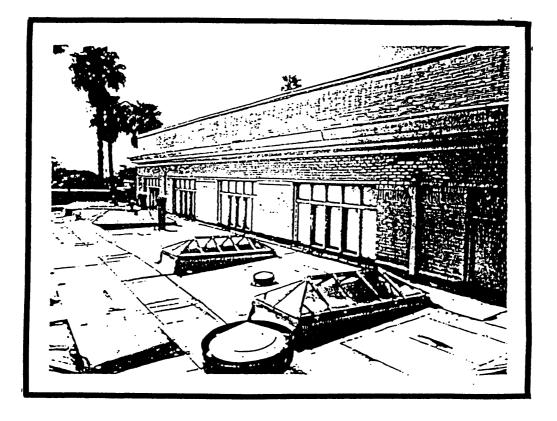
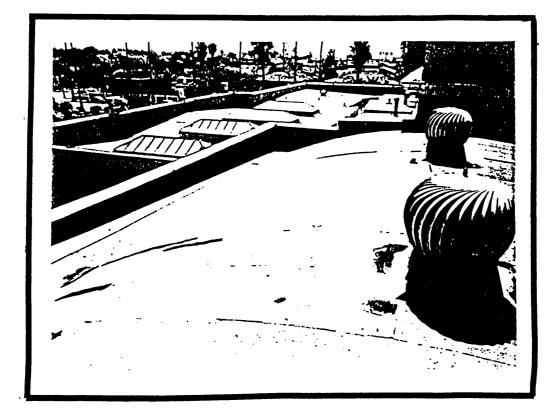


Fig. C Historic Elevation (east and west)









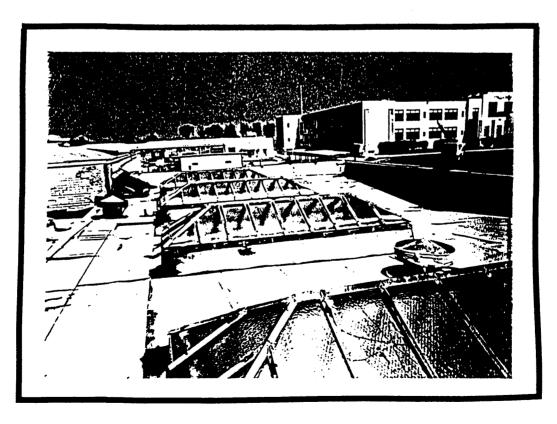
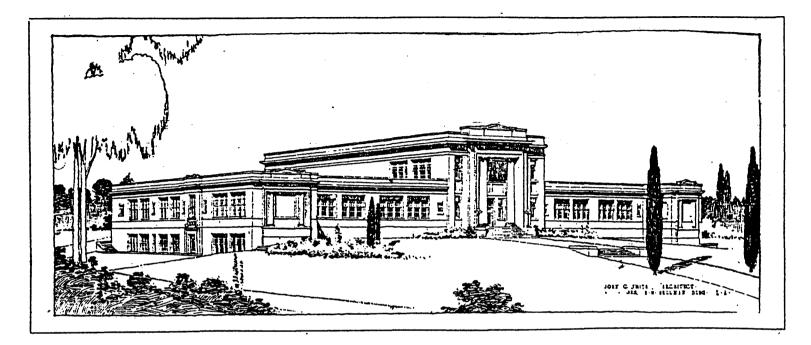


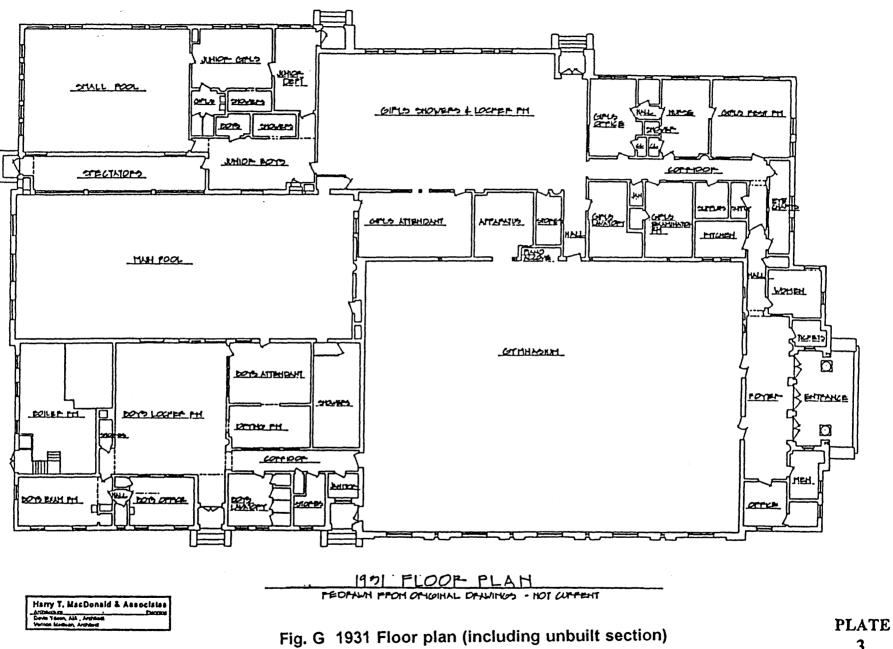
Fig. E Skylights over southeast section

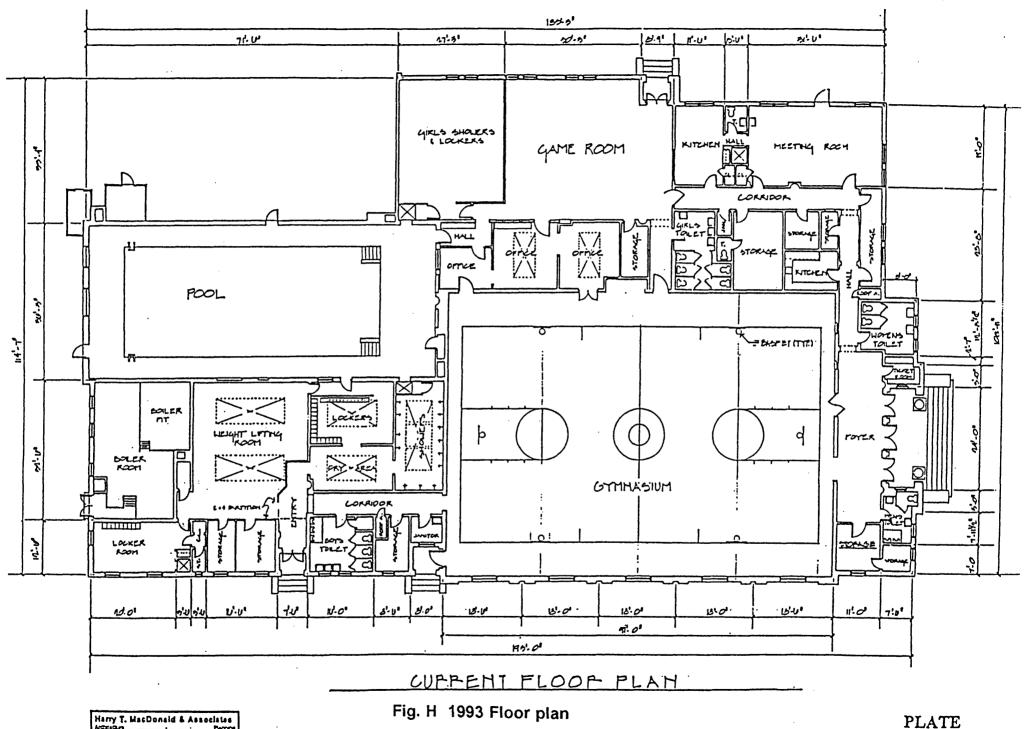


MAGNIFICENT GRAMMAR School dedicated

New Grammar School Building, Costing \$50,000, Formally Dedicated Friday Night of Last Week; Many Visitors Call On Teachers During the Reception Hour; Ten Class Rooms and Big Auditorium on Main Floor.

Fig. F Elementary Building, built 1916, demolished 1933





Harry T. MacDoneld & Associates Artification Annual Barries Don't Terres, All, Arrians Don't Terres, All, Arrians PLATE 4

or. At mid-span the

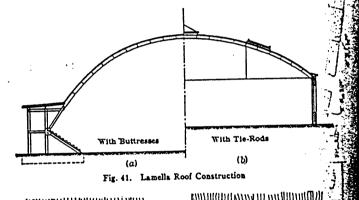
embedded in a concrete-filled trench beneath the floor. At mid-span the rods pass through a pair of angles and are there fitted with nuts to permit tightening up before being concreted in. The arches, including all hardware, weigh about 6 lb per sq ft of horizontal projection.

'1 ypes of Roof-Trusses

The design loads were as follows:

Dead load	16.5 lb per sq it	
C	72.0 10 bet ed te	
Wind-load (equivalent vertical)	10.0 lb per sq ft	.,
Wind-load (equivalent vertical)	• •	••

The arches were used in the roof construction of a Salt Lake City garage. Lamella Roof Construction A recent solution for the problem of spaning large floor-areas, where it is undesirable to use columns, is found in the -



2"Material

Fig. 42. Lamella Joints

LAMELLA ROOP. This type of roof-construction was developed in Germany in 1923 and has, within the past few years, been extensively used in this country.

The construction is essentially a wooden arch, either two- or three-hinged, the horizontal thrust of which is taken by buttresses, Fig. 41 (a), or by us rods, Fig. 41 (b), depending upon the type and arrangement of supports the arch is made of short timbers, called LAMELLAS, which are bolted together as shown in Fig. 42, to form a network of diamond-shaped panels, Fig. 43 (a)?

• Eng. News-Record, Vol. 80, page 595.

Types of Steel Roof-Trusses

The lamellas are curved on one side and beveled on both ends, as shown in Fig. 43 (b), and for a given roof they are all the same size.

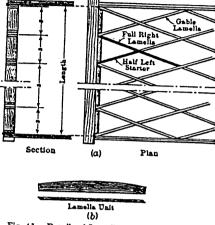
1281

A notable example of lamella roof construction is the Convention Hall at Houston. Texas. built

to house the Democratic National Convention in 1928.^e This structure consists of three bays roofed with lamella arches. The central bay has a span of 120 ft and a rise at the crown of 58 ft 4 in above the floor. Each side bay has a span of 15 ft 8 in and a rise at the crown of 41 ft 10 in.

Art. 8]

There were 2 000 lamellas 3 in \times 14 in and 12 ft long required for the central bay and 1 864 lamellas 2 in \times 10 in and 9 ft long required for each side bay.



Another notable ex-

Fig. 43. Details of Lamella Roof Construction

ample of lamella construction is the arena of the National Exhibition Company of St. Louis, Mo., † described in Article 13.

8. Types of Steel Roof-Trusses

General Considerations. With the exception of a few types, such as the hammer-beam and its various modifications, all forms of roof-trusses may be readily and economically constructed of standard structural-steel shapes. Steel roof-trusses may be supported directly on masonry walls in wall-bearing construction, or they may be supported by steel columns in steel-frame construction.

Standard structural-steel angles are the most practical and economical sections, both for chord and web-members of steel roof-trusses of usual spans and loading. For long-span construction roof-truss members may be composed of rolled-beam sections or built-up sections of various types.

i, Joints in steel roof-truss framing are generally riveted connections, although within the past few years great progress has been made in the use of welded bints for steel-frame structures. Arc-welded curved-chord trusses of relatively light construction have been successfully fabricated up to span lengths of 80 ft, and when welding becomes less dependent upon skilled labor, when values can be predetermined for the safe working allowance of the various types of welding, when inspection methods are perfected, and economical procedure established, welding may replace riveting, to a large extent, in widnary steel-frame roof-construction.

> * Eng. News-Record, Vol. 100, page 815. † Eng. News-Record, Vol. 104, page 935.

Fig. I Diagram of Lamella Roof structure

to 6" Material

(Kidder-Parker Architects' and Builders' Handbook, p. 1280-81)

1280