

Existing Conditions Report: University Community Park Adventure Playground



Prepared by



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PART I: EXECUTIVE SUMMARY

Site Background Information: Prior to the opening of the University Community Park site in 1976, the Adventure Playground (Playground) site was utilized as a staging area for adjacent residential construction activity. Additionally, the site was informally used by neighborhood children for unstructured play, which included building and manipulating construction materials and digging and shaping earth within the site.

As part of the City's 1974 Park Bond Program, University Community Park was developed and incorporated unstructured play activity into its overall plan and named the site Adventure Playground. The concept for adventure playgrounds originated in Europe after World War II. The premise of adventure playgrounds is for "places where children can create, modify and build objects for play rather than relying on manufactured equipment that serves a limit set of programmed purposes."

Over time, the scope of play and play structure amenities within Adventure Playground, as well as State law and National Safety Guidelines evolved. Initially, the only formal structure within the Playground was the Miner Shack, which included a staff Office, snack bar and tool shed. In 1988, through Capital Improvement Project No. 5035, the Challenger play structure (large rope bridge) was constructed. In 2005, volunteers constructed the Avenger play structure (large boat-like structure). All other play structures were designed and developed informally without permits or play equipment design/review, and constructed by staff and children as part of the play process. A site plan and list of Playground structures/facilities is presented on page 2.

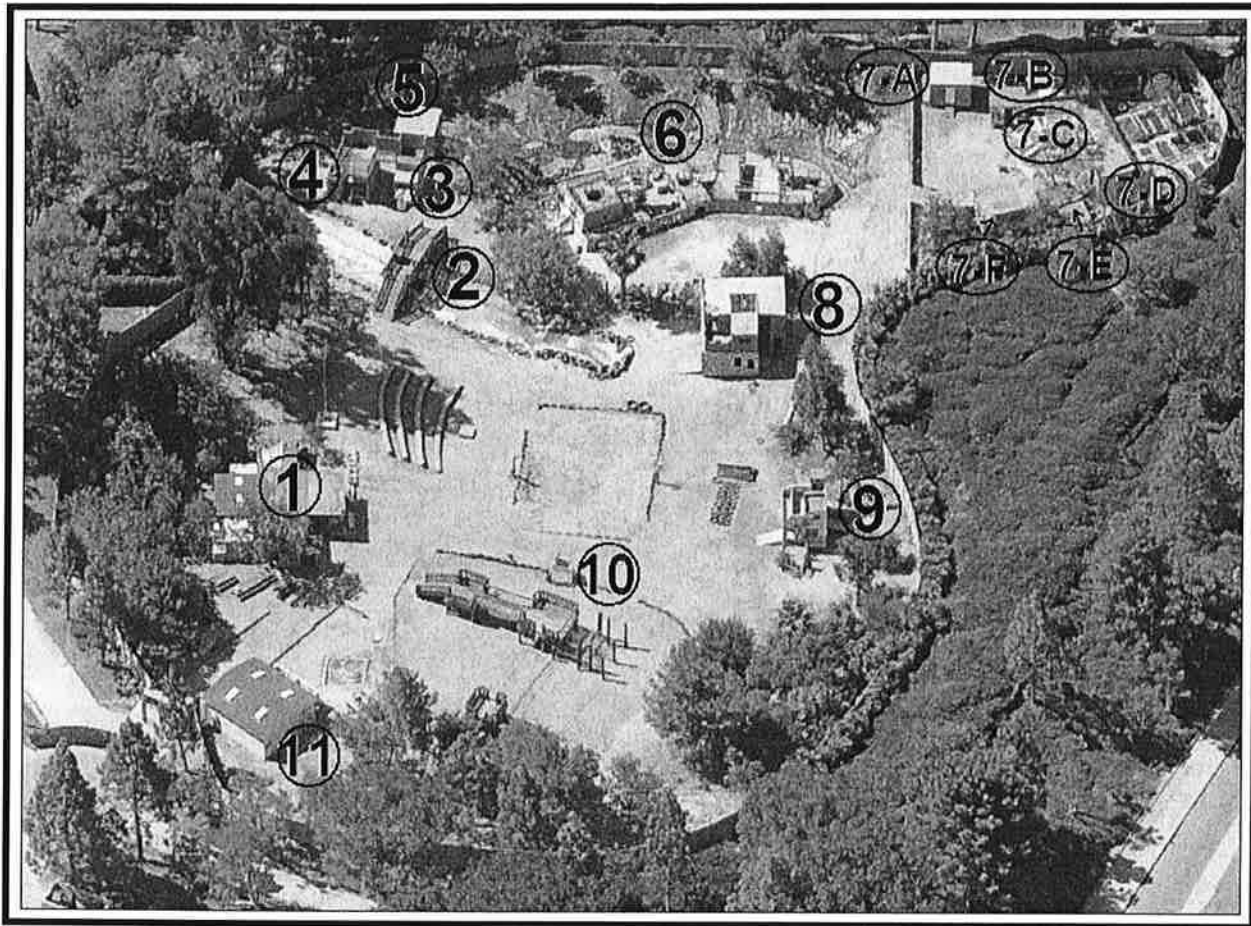
In 2008, due to modernization and expansion of the community center, the Playground was closed. After completing the modernization and expansion of the community center, staff performed a preliminary evaluation of the Playground site, buildings and playground equipment (July 2010). Due to deterioration of structures, playground safety/accident prevention requirements, American with Disabilities Act (ADA) access concerns, lack of formal plans and playground equipment review and water quality concerns, staff initiated structure removal efforts and debris and vegetation cleanup.

Shortly after determining playground structures within the Playground should be removed, a detailed evaluation of the site and playground structures' physical integrity and compliance with playground safety and ADA requirements was completed.

Various building and playground professionals conducted the following detailed field evaluation/investigations. The evaluators are: Joe Arias – License Architect and Dan Oyakawa – Senior Designer (Kishimoto Architects) evaluated architectural, Iain Buchan – Structural Engineer (Buchan Engineering Structures, Inc.), Robert Fisher – Landscape Architect and Certified Playground Inspector (Richard Fisher Associates), Brad Shelton – DPH-certified LBP Inspector/Risk Assessor and Project Monitor (Winzler and Kelly – Hazardous Materials Specialists), and Joe Kirkpatrick – City of Irvine Deputy Building Official. A summary of the evaluators findings are presented below and each detailed evaluation follows in a separate section of this report.

Additionally, aerial photos of the site are shown below on page 2 and page 3.

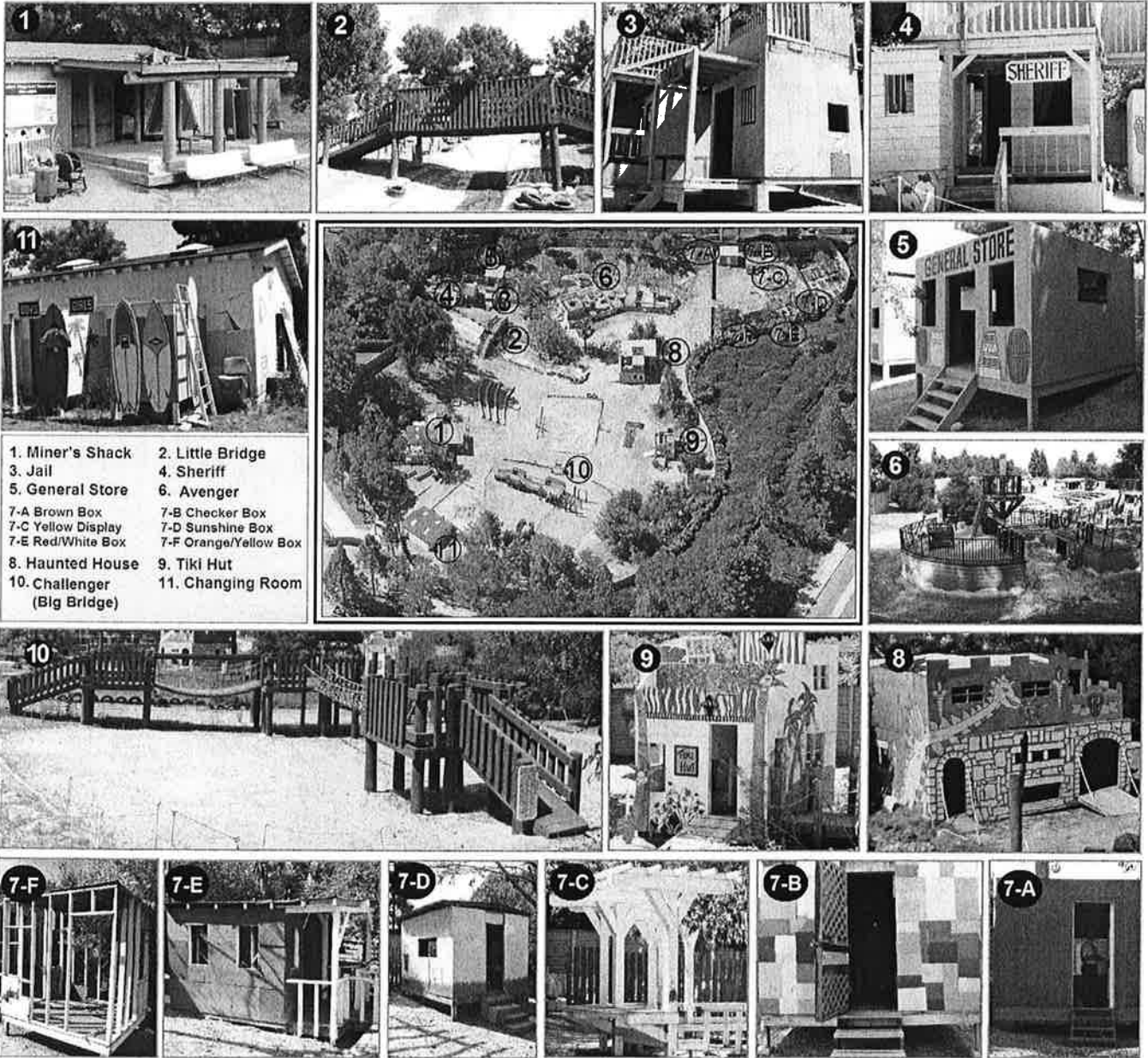
AERIAL PHOTO OF ADVENTURE PLAYGROUND AND LIST OF STRUCTURES/FEATURES



List of Structures

- | | |
|----------------------------|---------------------------------------|
| 1. Miner's Shack | 8. Haunted House |
| 2. Little Bridge Structure | 9. Tiki Hut |
| 3. Jail Structure | 10. Challenger (Big Bridge Structure) |
| 4. Sheriff Structure | 11. Changing Room |
| 5. General Store | |
| 6. Avenger | |
| 7. Miscellaneous Buildings | |
| 7a – Brown Box | |
| 7b – Checker Box | |
| 7c – Yellow Display | |
| 7d – Sunshine Box | |
| 7e – Red/White Box | |
| 7f – Orange/Yellow Box | |

AERIAL PHOTO OF ADVENTURE PLAYGROUND AND LIST OF MAJOR STRUCTURES/FEATURES



Playground and Equipment Requirements Background: Since the 1976 opening of University Community Park's Adventure Playground, the scope of play and the play structure amenities within the Playground, as well as State law and National Safety Guidelines governing public playground facilities have evolved.

In January 2000, California enacted legislation (AB 1055). In part, the legislation required a safety audit of existing public playground facilities by a National Playground Safety Institute (NPSI) Certified Playground Safety Inspector (CPSI) be completed by October 1, 2000. In 2006, revisions were enacted. Under the legislation, California's publicly accessible playgrounds were mandated to conform to safety guidelines that dictate design, installation, maintenance and supervision of playground facilities.

In addition, legislation provided the following definitions regarding playground facilities (Source: California Code of Regulations - Title 22. Social Security - Division 4. Environmental Health - Chapter 22 - Safety Regulations for Playgrounds).

§65700.10. Playground Equipment: "Playground Equipment" means a fabricated structure intended primarily for play by children located at a playground which has at least one surface designated and intended for play by children and which is anchored to or built into the ground and not intended to be moved.

§65710. Operator Requirements: (a) Operators shall comply with the design, installation, inspection, and maintenance of a playground and playground equipment, which are identified in this chapter and are hereby incorporated by reference.

Furthermore, California Health and Safety Code Section 115730 requires all public agencies must specifically upgrade their playgrounds by replacement or improvement as necessary. The upgrades or improvements must be completed by January 1, 2003.

General Architectural Findings: The detailed architectural evaluation is found in PART II of this report. The following summarizes the detailed architectural evaluation.

1. Site grade is not accessible. Concerns include:
 - a. Combination of hard and soft earth with uneven grades surrounding play areas (difficult to traverse – non accessible paths)
 - b. Steep grades above play structures (potential of falling from the hillside into play structure)
 - c. Undulating site with debris
 - d. Boulder field with sharp edges
2. Site drainage and erosion sediment controls non-existent/inadequate. Concerns include:
 - a. Inadequate drainage system to serve site
 - b. Drainage outlets without proper sediment filters
 - c. Drainage outlets filled with sediment blocking site drainage
 - d. Inadequate drainage and treatment systems to prevent contaminated water reaching storm drain system
 - e. Steep grades prone to erosion

3. Structures and play features do not comply with current building and playground code requirements. Concerns include:
 - a. Non accessible access into buildings and play structures
 - b. Steep ramps to buildings and play structures do not have non-slip treatment
 - c. Large wall openings in buildings present potential fall injuries
 - d. No structural bracing in one and two story structures
 - e. Non accessible drinking fountains
 - f. No public restrooms are available on site. Individuals must access restrooms within community centers.

General Structural Findings: The detailed structural evaluation is found in PART III of this report. The following summarizes the detailed structural evaluation.

1. The existing structural assessment of the buildings and play structures found (with exceptions to Advenger, The Big Bridge, Changing Room, and Brown Box) were not intended as permanent structures. The framing and cladding of these structures are exposed to the elements and in direct contact with the earth.
2. Generally, the 2-story structures are structurally deficient and in a state of decay including floor framing, floor and wall sheathing, guardrails and stairs/ladders and pose a safety hazard. All of the structures do not meet current structural building codes and require extensive renovation, repair or complete replacement.

General Playground and Equipment Findings: The detailed structural evaluation is found in PART IV of this report. The following summarizes the detailed structural evaluation.

1. Also all elevated play equipment lacks (proper depth of) approved impact-absorbing material underneath the structures, as required by CPSC and ASTM F1487-95.
 - a. These regulations specify conforming protective surface type, critical fall heights and how far surfacing must extend from the structure.
2. Within numerous play structures there are several "hiding areas" that create opportunities for inappropriate behavior requiring City staff to be extra vigilant in their supervision.
3. The perimeter trees provide areas of shade.
4. Existing signage displayed rules of conduct at playground entry and at some specific play equipment.
 - a. Some of these signs are damaged.
5. The Playground site assessment found the existing structures sufficiently spaced from perimeter fencing.

General Hazardous Materials Findings: The detailed structural evaluation is found in PART V of this report. The following summarizes the detailed structural evaluation.

1. A total of 135 XRF readings testing for lead based paints were performed
2. No lead based paints were noted

General Building and Safety Findings: The detailed City of Irvine Building and Safety Division's detailed evaluation is found in PART VI of this report. The following summarizes that evaluation.

1. Adventure Playground site and structures are currently closed to the public.
2. The evaluation includes site issues such as accessibility within the site including paths to play components, water quality, building accessibility in those instances when the California Building Code is applicable, and construction standards. It does not include minimum playground safety regulations as adopted by the State of California (CA Code of Regulations, Title 22, Division 4, Chapter 22, Article 1-4), nor does it cover accessibility requirements over, on or within play structures.
3. Site Deficiencies
 - a. Lacks code-compliant accessible paths of travel to and between the facilities
 - b. Lacks accessible ramps and landings to each facility entrance and threshold
 - c. Lacks effective site drainage, erosion and sediment controls
4. Building/Structure Deficiencies
 - d. Deterioration of building exteriors
 - i. Excessive weathering of press board and plywood exterior cladding (materials intended for interior use only)
 - e. Dry rot, mold, and termite damage throughout facilities
 - f. Lack proper foundations and foundation connections in majority of structures
 - i. Lack of construction standard and basic load path elements for lateral load resistance such as hold-downs and strapping at framing discontinuities
 - g. Mining Shack and Changing Room do not comply with California Building Code accessibility standards for entrance and accessible route of travel to all elements and spaces within the building/facility
5. Recommendations
 - h. Renewed use of the Mining Shack, Changing Room, bridges, and Pirate Ship is inadvisable due to their lack of accessibility
 - i. In their current state, the remainder of the buildings should be considered unsuitable for renewed use. The unconventional construction, the degree of termite damage, dry rot, deterioration, and lack of accessibility features makes the buildings' use a potential safety hazard.

PART II – ARCHITECTURAL EVALUATION:

The architectural evaluation was performed by Joe Arias – License Architect and Dan Oyakawa – Senior Designer (Kishimoto Architects). The findings are as follows:

Accessibility

1. Non accessible access into buildings and play structures
2. Wood ramps with raised wood battens (some broken or missing) create a tripping hazard

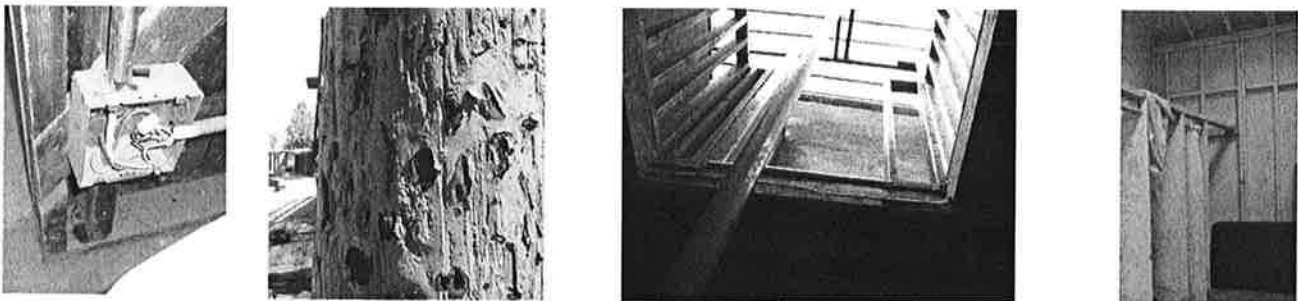
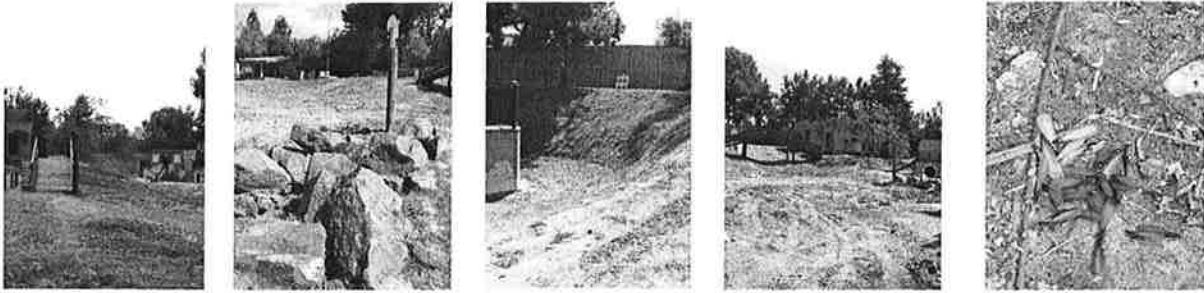
Building/Structure Suitability

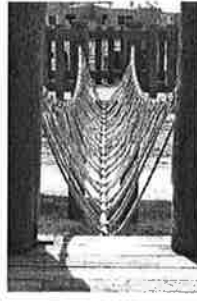
1. Un-protected floor opening at second floor
2. Steep wooden stairs that do not have non-slip surface treatment on treads
3. No handrails on some stairs
4. Rough handrail/guardrail surfaces (potential for cuts and splinters)
5. Wood handrails that do not meet building code regulations
6. Wood ladders that do not properly extend above the second floor creating fall hazard
7. Loose guard rails on second floor play deck
8. Weathered plywood floors, walls and roofs (holes, sags, rot, mold, termite damaged, bird and rodent droppings)
9. Sub Subterranean termite nests
10. Exposed and rusted wood fasteners
11. Chipped and flaking paint
12. Exposed floor framing at some buildings (exposure to rusted wood fasteners)
13. No structural bracing on one and two story buildings
14. Exposed electrical connection at Mining Shack
15. Doors leading into Changing rooms are double swinging and do not have a view window
16. Insufficient ventilation in changing rooms

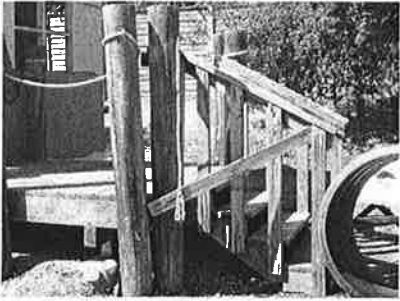
Playground features

1. Flag pole with hard landing surface
2. Logs placed on end serving as steps to play structure (potential of fall and strike injuries)
3. Openings in chains supporting suspended bridge have potential for finger injuries
4. Cargo net has potential for injuries (choking, broken bones, etc.)
5. Wood post directly under sagging cargo net (strike hazard)
6. A 3 rope foot bridge has potential for fall injuries. Bottom of bridge is at least 5'-0" above the ground
7. Area under rope foot bridge is un-padded and un-defined

Photo Documentation







PART III – STRUCTURAL EVALUATION:

The structural evaluation was performed by Iain Buchan – Structural Engineer (Buchan Engineering Structures, Inc.). The findings are as follows:

1. General Structural Deficiencies Key:

- A. Foundation and raised floor level structural posts un-treated or treated wood not specifically treated for permanent contact with earth, embedded directly into the earth. (CBC 1805.4.5-6)
- B. Foundation and raised floor level structural posts non-treated, embedded directly into concrete footings with direct contact to earth or with inadequate separation from foundation concrete. (CBC 2304.11.2.7)
- C. Non-treated raised floor framing with less than the required clearance from earth; 18" to joist and 12" to beams. (CBC 2304.11.2.1)
- D. Non-treated structural framing members and plywood/OSB sheathing exposed to weather with no protective paint or other waterproofing barrier or wood siding in direct contact or within less than 6" from the earth. (CBC 2304.11.2.6)
- E. Incomplete or inadequate lateral force resisting system lacking proper shear transfer connections, foundation anchors and tie-down straps or hardware.
- F. Inadequate or non-existent guard rail, post and picket/paneling connections for raised floor and second floor locations greater than 30" above adjacent surfaces. (CBC 1607.1).
- G. Framing member size inadequate to support dead and live loads (CBC Ch 16 & 23).
- H. Framing connections inadequate to support dead and live loads (CBC Ch 16 & 23)
- I. Framing connectors and nails exposed to weather with no protective coating (galvanized) or stainless steel corroding and rusting.

2. Miner's Shack:

Single story Structure wood framed construction divided into 4 interior areas and with a covered porch. With the exception of the rear portion which is a concrete slab on grade, the majority of the structure is raised floor with wood posts See A, B & C. Although the exterior wall studs are covered with plywood sheathing, there is inadequate lateral resisting system see E. The covered porch floor and steps are in direct contact with earth. The porch and main roof ridge are 8" diameter pole post and beam with a single "T" strap on one side, see H.

3. Little Bridge:

Single span bridge structure with wood ramp at each end. The structure consists of 8" diameter wood posts embedded directly into the earth see A (possibly treated, see hazardous materials section of the report), with stacked 2x6 joists spaced @ 16" o.c., see G. The guardrail consists of spaced 2x4 vertical members that are bisected at each end of the bridge with diagonal 2x4 creating a hinge point at varying heights with a 2x6 oriented vertically at the top and bottom and a flat 2x4 top rail. The guardrail load path is discontinuous and not adequate see F.

3&4 Jail and Sheriff:

Two 2-story wood framed structures connected by a second story bridge. The foundation/raised floor consists of treated and non-treated wood posts embedded into concrete and directly into earth with non-treated joists and beams, see A, B, and C. The raised floor sheathing is warped and no longer connected to the perimeter framing, and the second floor plysod is deteriorating, see D. There is inadequate lateral system see E. The second floor guardrail is inadequate, lacking positive connections and framing members, see F.

5. General Store:

1-story wood framed structure. The foundation/raised floor consists of treated wood posts embedded into concrete and non-treated joists and beams, see A, B, and C. entry stair stringers are embedded into earth with no handrail. The raised floor sheathing is warped and water ponding was visible due to recent rains. There is inadequate lateral system see E. The second floor guardrail is inadequate, lacking positive connections and framing members, see F. Mold and deterioration was visible in the framing and sheathing.

6. Adventure:

Split level 1 and 2-story wood framed construction. Generally one of the better structural systems of the park. Foundation was not visible, but appeared to be pressure treated wood grade beam and post members embedded into earth, A or B. Finish surfaces are constructed of durable materials intended for exposure to the elements. Structural members exposed to weather, see D. Guardrails are not adequately connected to the structure, see F.

7. Builder's Corner Structures:

7A. Brown Box:

1-Story structure wood framed structure with raised floor foundation w/ pressure treated 4x4 posts set on pre-cast concrete piers. Non-treated raised floor framing see C. Inadequate lateral force resisting system, see E. Asphalt shingle roofing and T1-11 siding adequate for exposure to the elements exist.

7B. Checker Box:

1-Story structure wood framed structure with raised floor foundation w/ non-treated 4x4 posts set on pre-cast concrete piers. Non-treated raised floor framing see C. Floor joist have no hangers to rim beams, and rim beams have no hardware caps to foundation posts, see H. Inadequate lateral force resisting system, see E. Asphalt shingle roofing and painted siding adequate for exposure to the elements exist. Inadequate lateral force resisting system, see E.

7C. Yellow Display

Wood post and beam trellis structure with 6x6 posts attached to concrete foundation with steel knife plate connectors, appears to be strctrurally sound except for inadequate separation of non-treated wood to foundation concrete. Inadequate lateral force resisting system, see E.

7D. Sunshine Box:
1-Story structure wood framed structure with raised floor foundation w/ non-treated 2x4 and 4x4 posts embedded directly into earth, see A. Non-treated raised floor framing see C. Floor joist have no hangers to rim beams, and rim beams have no hardware caps to foundation posts, see H. Severe deterioration of framing and sheathing is visible, see D. Inadequate lateral force resisting system, see E.

7E. Red and White Box:
1-Story structure wood framed structure with raised floor foundation w/ non-treated 2x4 and 4x4 posts embedded directly into earth and on pre-cast concrete posts, see A and B. Non-treated raised floor framing see C. Floor joist have no hangers to rim beams, and rim beams have no hardware caps to foundation posts, see H. Severe deterioration of framing and sheathing is visible, see D. . Inadequate lateral force resisting system, see E.

7F. Orange and Yellow Box:
1-Story structure wood framed structure with raised floor foundation w/ non-treated 2x4 and 4x4 posts embedded directly into earth and on pre-cast concrete posts, see A and B. Non-treated raised floor framing see C. Floor joist have no hangers to rim beams, and rim beams have no hardware caps to foundation posts, see H. Severe deterioration of framing and sheathing is visible, see D. Inadequate lateral force resisting system, see E.

8. Haunted House:
2-story wood framed structure. The foundation/raised floor consists of treated and non-treated wood posts embeded into concrete and directly into earth with non-treated joists and beams, see A, B, and C. The raised floor sheathing is warped and the first and second floor plywood is deteriorating, see D. There is inadequate lateral system see E. The second floor guardrail is inadequate, lacking positive connections and framing members, see F.

9. Tiki Hut:
2-story wood framed structure. The foundation/raised floor consists of treated and non-treated wood posts embeded into concrete and directly into earth with non-treated joists and beams, see A, B, and C. The raised floor sheathing is warped and the first and severe deterioration of framing and sheathing is visible, see D. There is inadequate lateral system see E. The second floor guardrail is inadequate, lacking positive connections and framing members, see F.

10. Big Bridge:
Three main pole structures connected by two single span bridges a rope climbing structure and miscillaneous poles embedded in the earth and wood ramps at each end. The structure consists of 10" diameter wood posts embeded directly into the earth see A (possibly treated, see hazardous materials section of the report), with painted and treated 4x beams and joists which appear to be of fairly solid construction. The guardrail consists of spaced 4x6 vertical pickets with a

4x8 at the top and bottom of the guardrail and bolted to full height round log poles. The chain and wood bridge appears to be structurally solid, though full height round log poles supporting chain connections need engineering to determine See A (possibly). The cable bridge appears to be structurally sound with exception of the end connections of the bottom rail to the rim. The 4x8 rim beam is being pulled away from the joist hangers and deck boards. Generally one of the most solid structures at the site.

11. Changing Room:

1-story wood framed structure. The foundation is a concrete slab on grade with raised concrete curb around the perimeter. Conventional 2x stud walls around the perimeter of the building are set on treated 2x sill plate with plywood shear walls, metal anchor bolts and tie-down strapping at the wall ends. The roof structure is conventional 2x rafters with plywood sheathing and composition roof covering. There is appears to be inadequate lateral resisting system. Generally one of the most solid structures at the site.

PART IV – PLAYGROUND AND EQUIPMENT EVALUATION:

The playground and equipment evaluation was performed by Robert Fisher – Landscape Architect and Certified Playground Inspector (Richard Fisher Associates). The findings are as follows:

<u>#</u>	<u>Play Structure</u>	<u>Apparent Uses</u>	<u>Playground Safety Issues</u>
1	Miner's Shack	Office / Maintenance Facility - Primarily for City Staff	N/A
2	Little Bridge	Climbing Play Structure	<ul style="list-style-type: none"> A. Ramps <ul style="list-style-type: none"> 1. Railings <ul style="list-style-type: none"> a. Vertical pickets spacing: too great 2. Handrails <ul style="list-style-type: none"> a. Required both sides B. Hardware Protrusions C. "High-side" / "Low side" Support Columns adjacent to water slide edges <ul style="list-style-type: none"> 1. High-side Columns Covered with carpet padding 2. Low-side Columns Not Covered with carpet padding – potential hazard
3	Jail	Playhouse Structure	<ul style="list-style-type: none"> A. Steps <ul style="list-style-type: none"> 1. Needs Handrail (1-side)
4	Sheriff – Ground Floor	Playhouse Structure	<ul style="list-style-type: none"> A. Steps <ul style="list-style-type: none"> 1. Needs Handrail (1-side) B. Ramp Railings <ul style="list-style-type: none"> 1. Vertical pickets spacing: too great 2. Bottom horizontal rail-to-deck spacing: too great C. Hardware Protrusions D. Ramp Railings <ul style="list-style-type: none"> 1. Vertical pickets spacing: too great E. Ladder upper deck opening <ul style="list-style-type: none"> 1. Needs Handholds 2. Needs (2) sided barriers (w/ ladder side having no barrier)
	Sheriff – Upper Floor		
5	General Store	Playhouse Structure	<ul style="list-style-type: none"> A. Steps <ul style="list-style-type: none"> 1. Needs Handrail (1-side) B. Floor <ul style="list-style-type: none"> 1. Remove 2" x 4" nailed to floor (trip item)

#	<u>Play Structure</u>	<u>Apparent Uses</u>	<u>Playground Safety Issues</u>
6	Adventure Pirate's Ship – Ground Level	Climbing Play Structure	<ul style="list-style-type: none"> A. Vertical Poles Climber <ul style="list-style-type: none"> 1. Bottom step to second step: double(+) the distance of other pole steps 2. Cannon too close to climbing poles B. Cargo Net <ul style="list-style-type: none"> 1. Entrapment space at top end 2. Top openings (to upper deck) exceed 15" width (as great as 68") 3. 'D' rings not safety hardware C. Climbing Wall <ul style="list-style-type: none"> 1. No Handholds at top 2. Top openings (to upper deck) exceed 15" width (as great as 36") D. Barrier Railings <ul style="list-style-type: none"> 1. Vertical pickets spacing: too great 2. Height of barrier top rail: too low 3. Openings: exceed max. 15" width 4. 2' sq. end posts don't function as hand holds (must be max. 1 ½" dia.) 5. Gates (at top of climbing wall) <ul style="list-style-type: none"> a. Only wired shut b. Opening exceeds 15" (currently 36") c. Pinch points at hinged side 6. Opening from Top Deck to Lower Deck (6'-10") <ul style="list-style-type: none"> a. No Climbing Apparatus 7. Firepole Opening from Top Deck to Lower Deck <ul style="list-style-type: none"> a. Opening exceeds 15" b. Circulating distance from Pole to edge not min. 18" E. Ladder Upper Deck Opening <ul style="list-style-type: none"> 1. Needs Handholds at top transition 2. Opening exceeds max. 15" width F. Elevated (50") Balance Beam? or Deck? <ul style="list-style-type: none"> 1. If Balance Beam: max. 16" above grade 2. If Deck, must be 36" wide (existing 5 ½" wide) 3. Either case, requires rigid guard rails
	Adventure Pirate's Ship – Upper Deck		

#	<u>Play Structure</u>	<u>Apparent Uses</u>	<u>Playground Safety Issues</u>
			<ul style="list-style-type: none"> G. Slide <ul style="list-style-type: none"> 1. Exit height must be between 7" & 2. 15" above protective surfacing 3. Sharp edges at top opening frame 4. Handgrips missing at top opening H. Crows Nest Ladder <ul style="list-style-type: none"> Needs Handholds at top transition
7a	Carpenter's Corner - Brown Box	Storage Shed	<ul style="list-style-type: none"> A. Steps <ul style="list-style-type: none"> 1. Needs Handrail (1-side)
7b	Carpenter's Corner - Checker Box	Planting / Play Supplies - Check-out Activities	<ul style="list-style-type: none"> A. Steps <ul style="list-style-type: none"> 1. Needs Handrail (1-side)
7c	Carpenter's Corner - Yellow Display	Instructional Venue	<ul style="list-style-type: none"> A. Concrete Footings (2) <ul style="list-style-type: none"> 1. Exposed, creating Trip & Fall Hazard B. Hardware Protrusions <ul style="list-style-type: none"> 1. On Instructional Table
7d	Carpenter's Corner - Sunshine Box	Carpentry Activities	<ul style="list-style-type: none"> A. Steps <ul style="list-style-type: none"> 1. Needs Handrail (1-side) 2. Top Landing not flush with floor level - Trip & Fall Hazard B. Hardware Protrusions <ul style="list-style-type: none"> 1. Inside & Outside
7e	Carpenter's Corner - Red / White Box	Building Materials Storage	N/A
7f	Carpenter's Corner - Orange / Yellow Box	Craft Activities	<ul style="list-style-type: none"> A. Trip & Fall Hazard <ul style="list-style-type: none"> 1. Elevated threshold 2. Board nailed to floor B. Tabletop not secured properly C. Sharp corners on shelf D. Elevated floor w/ open stud walls; spacing as wide as 28" (need barrier)

#	<u>Play Structure</u>	<u>Apparent Uses</u>	<u>Playground Safety Issues</u>
8	Haunted House - Ground Level	Interior Rooms Maze	<ul style="list-style-type: none"> A. Large Boulders scattered within 4' of building; too close to structure B. Standing water inside room C. Stairs <ul style="list-style-type: none"> 1. Handrail needs extension on top and bottom ends 2. Bottom landing is a 15" riser; while stairs average 8" riser 3. Stair risers vary from 7 ¼" to 8 ½" (must be consistent) 4. Eye bolt hardware protrusion at stairs D. Firepole <ul style="list-style-type: none"> 1. Bottom landing is elevated 32" above floor, with no steps 2. Distance from landing to walls only 18" - 23"; too close 3. Pole pipe 2 ½" dia. Must be 1.9" max. 4. Firepole opening is 15" - must be 18" open distance 5. Barriers <ul style="list-style-type: none"> a. Barrier opening is 25 ½" (max is 15") b. Vertical pickets spacing: too great E. Ladder in SW corner <ul style="list-style-type: none"> 1. Requires handholds 2. Ladder needs relocated 90 degrees to non-barrier edge F. Ladder in North room <ul style="list-style-type: none"> 1. Requires handholds 2. Ladder needs relocated 90 degrees to non-barrier edge 3. Ladder top can't extend above upper floor level 4. Barriers <ul style="list-style-type: none"> a. Vertical pickets spacing: too great
	- Upper Floor		

#	<u>Play Structure</u>	<u>Apparent Uses</u>	<u>Playground Safety Issues</u>
9	Tiki Hut - Ground Level	Interior Rooms Maze	<ul style="list-style-type: none"> A. Slide <ul style="list-style-type: none"> 1. Requires bottom landing 2. Requires 4" raised edges 3. Insufficient sit-down space at top of slide 4. Galvanized steel bed faces west; high chance of hot surface - skin burns B. Deck <ul style="list-style-type: none"> 1. Handrail needs extension on top and bottom ends C. Ladder #1 <ul style="list-style-type: none"> 1. Requires handholds 2. Must remove step-over which is 13 3/4" above upper floor level 3. Opening is 32" (max. opening 15") D. Ladder #2 <ul style="list-style-type: none"> 1. Requires handholds 2. Ladder needs relocated 90 degrees to non-barrier edge 3. Ladder top can't extend above upper floor level 4. 22" step from ground floor to bottom landing; distance too great
	- Upper Floor		

#	<u>Play Structure</u>	<u>Apparent Uses</u>	<u>Playground Safety Issues</u>
10	Big Bridge	Climbing Play Structure	<ul style="list-style-type: none"> A. Railings <ul style="list-style-type: none"> 1. Vertical pickets spacing: too great B. Post Railings <ul style="list-style-type: none"> 1. Top Flat Surface: <ul style="list-style-type: none"> a. Too much area - considered play space b. Top must be domed / coned to discourage play activities C. Clatter Bridge <ul style="list-style-type: none"> 1. Barriers: <ul style="list-style-type: none"> a. Vertical pickets spacing: too great 2. Hardware protrusions on underside of bridge D. Rope Bridge <ul style="list-style-type: none"> 1. No Safety Surfacing 2. Hardware not tamper-proof 3. End openings <ul style="list-style-type: none"> a. 24" wide (max 15") b. Requires handholds E. Climbing Net <ul style="list-style-type: none"> 1. Hardware not tamper-proof 2. Jute netting cut / broken in numerous locations 3. Supporting Post centered in climbing net area (injury potential) 4. Top Deck Barrier Openings <ul style="list-style-type: none"> a. Openings varies up to 36" wide (max 15") b. Opening extends beyond Climbing Net with no barrier
11	Changing Room	Support Facility	N/A

PART V – HAZARDOUS MATERIALS EVALUATION:

The hazardous materials evaluation was performed by Brad Shelton – DPH-certified LBP Inspector/Risk Assessor and Project Monitor (Winzler and Kelly – Hazardous Materials Specialists). The findings are as follows:

INTRODUCTION

Winzler & Kelly (W&K) performed a hazardous building materials survey of Adventure Playground, located at 1 Beech Tree Lane in Irvine, California. Areas surveyed included the interior and exterior of the wooden structures throughout the park.

The survey was conducted on October 8, 2010, by Brad Sheldon. Mr. Sheldon is a DPH-certified LBP Inspector/Risk Assessor and Project Monitor. He is an employee of Winzler & Kelly.

METHODOLOGY

Lead-Containing Surface Coatings/Lead-Based Paints (LCSC/LBP) - Analytical Methodology

Potential LCSCs/LBPs were identified via visual identification. The representative, suspect surface coatings were then measured on-site through the use of a NITON XL x-ray fluorescence (XRF) spectrum analyzer, in accordance with the requirements of the manufacturer's performance characteristics sheet (PCS) for this instrument.

For purposes of this survey, and in accordance with Title 8 of the California Code of Regulations, Section 1532.1 (8 CCR 1532.1), Title 17 of the California Code of Regulations, Section 35001 et. seq., the XRF measurement data results were interpreted as follows:

1. Positive results (lead-based paint present) were determined when analytical results revealed a lead concentration of 1.0 mg/cm² or greater.
2. Negative results (lead-containing surface coatings not present) were determined when analytical results revealed a lead concentration of less than 1.0 mg/cm².

RESULTS

A. Lead-Based Paints and Lead-Containing Surface Coatings

W&K collected a total of 135 XRF readings while testing representative potential Lead-Based Paints (LBP) at the subject site through the use of a NITON XL x-ray fluorescence (XRF) spectrum analyzer. In summary, the materials were identified as lead-based paints as a result of the XRF testing, including:

Adventure Playground

1. None Identified

XRF Data for each of the XRF readings collected as part of this survey can be found in Section 5 of this report.

CONCLUSIONS/RECOMMENDATIONS

Lead-Based Paints (LBP)

The representative LBP survey revealed that there are not building component coated with LBP present.

At present there are no state or federal OSHA regulations dealing with mandatory abatement following the identification of lead-containing materials prior to disturbance. However, in 1993 the Occupational Safety and Health Administration has promulgated legislation (29 CFR 1926.62 and 8 CCR 1532.1) entitled "Lead Exposure in the Construction Industry" which deals with worker exposure to lead. This legislation requires that any job which may potentially expose workers to any concentration of lead be monitored to determine workers eight-hour time weighted average (TWA) exposure to lead. Prior to conducting activities which may generate a lead exposure, subject workers must be properly fitted with respiratory protection and protective clothing until personal eight-hour TWA results reveal exposures within acceptable levels.

All activities involving potential and identified lead-containing surfaces should be conducted in accordance with Title 8, California Code of Regulations, Section 1532.1 and 29 CFR 1926.62. **Please note that Cal/OSHA does not recognize either XRF testing or paint chip sampling as a valid method for determining lead exposure to workers. The requirements of 8 CCR 1532.1 must be complied with by all contractors performing work which may impact a painted surface, even where testing has determined lead levels to be below the lead-based paint level.**

In addition, all activities involving identified lead-based paints must be conducted in accordance with Title 17, California Code of Regulations, Division 1, Chapter 8, Sections 35001 through 36100, which proscribes the use of DPH-certified workers, work practices, and other requirements.

Written notification to Cal/OSHA must be accomplished should LBP activities involve more than 100 square or 100 linear feet of removal in accordance with the requirements of 8 CCR 1532.1. Proper written notification to Cal/DPH *may* be required, depending upon the nature of the abatement activity. Proper waste characterization and disposal of lead-containing materials and lead-contaminated debris should be conducted in accordance with Title 22 of the California Code of Regulations and the California Health and Safety Code, Section 25157.8.

Any welding, cutting or heating of metal surfaces containing surface coatings should be conducted in accordance with 29 CFR 1926.354. This regulation requires surfaces covered with toxic preservatives, and in enclosed areas, be stripped of all toxic coatings for a distance of at least 4 inches, in all directions, from the area of heat application prior to the initiation of such heat application.

PART VI – CITY OF IRVINE BUILDING AND SAFETY DIVISION EVALUATION:

The building and safety evaluation was preformed by Joe Kirkpatrick – City of Irvine Deputy Building Official. The findings are as follows:

Introduction

The following are findings based on a review of the Adventure Playground site and structures which are currently closed to the public. This evaluation includes site issues such as accessibility within the site including paths to play components, water quality, building accessibility in those instances when the California Building Code is applicable, and construction standards. It does not include minimum playground safety regulations as adopted by the State of California (CA Code of Regulations, Title 22, Division 4, Chapter 22, Article 1-4), nor does it cover accessibility requirements over, on or within play structures.

Site

The site is uneven and includes several slopes, total surface area, according to Community Services personnel, is approximately four acres. Elevation varies by an estimated 15 to 20 feet within the site with the perimeter generally higher creating a bowl effect. Community Services personnel also indicate a single 8 inch drain serves the site and terminates in the street gutter on Sandberg Street in the vicinity of the County Library. The site is mostly barren making it prone to erosion as indicated by the build-up of sediment at the drain inlet. Based on a rough calculation, at a minimum, a larger 10 inch pipe is necessary to adequately serve the site. In addition, under state mandated water quality regulations (State of California Regional Water Quality Control Board Santa Ana Region ORDER NO. R8-2009-0030 NPDES No. CAS618030) proper sediment and erosion control measures are required to ensure that no contaminated storm water or other non-storm water run-off leaves the site. Typical measures would include a combination of hardscape and landscape to minimize run-off and prevent erosion.

Play Area accessibility standards are defined in the Americans With Disabilities Act (ADA) Accessibility Guidelines for Buildings and facilities; Play Areas. These guidelines contain provisions for ground level and elevated play components, accessible routes, ramps and transfer systems, ground surfaces, and soft contained play structures.

Pursuant to section 15.6 of aforementioned guidelines accessible paths are required to at least one of each type of “ground level play components” defined as “a play component that is approached and exited at ground level”. Unique “ground level play components” include the Pirate Ship, the Haunted House and the Big Bridge. In addition each building that serves Adventure Playground users is required under the California Building Code Chapter 11B to be on an accessible path. These include the “Changing Room” Building and “Mining Shack”. All accessible buildings and play components are also required to be interconnected via accessible paths.

Of the other play house type structures, one in each within the “Jail” and “Builder’s Corner” areas are required to have an accessible path.

Accessible paths are required to be firm, stable, and slip resistant. Clear width is generally required to be 60 inches with cross slopes no greater than 2%. Slopes in the direction of travel may be up to 1:20 before being considered a ramp thus triggering handrail and intermediate landing requirements. Ramps may be as steep as 1:12 and require intermediate landings at intervals not to exceed 30 inches of vertical rise.

The Adventure Playground currently contains no accessible paths. At a minimum an accessible path is required from the playground entry to each of the following in addition to sufficient interconnectivity:

- The "Mining Shack"
- The "Changing Room"
- the "Big Bridge"
- the "Pirate Ship"
- the "Haunted House"
- one each of the play house buildings in the "Jail" area and "Builder's Corner".

Site grading is required to create accessible paths. Based on a visual review of the site, it appears that complying paths could take the form of walks (i.e. not ramps) from the entry to the Mining Shack and the Changing Room building. The remaining elements would require a combination of walks and ramps.

Site Summary:

The following summarizes site deficiencies:

- lacking effective site drainage
- lacking effective combination of erosion and sediment control
- lacking code compliant accessible paths of travel to and between (interconnectivity) the facilities itemized above
- lacking accessible ramps and landings to each facility entrances or thresholds

Note: to meet accessible path surfacing requirements in an effective and economic manner, concrete would be the likely material choice for all walks and ramps.

Structures

Structural/construction

Dry rot, mold and termite damage are typical as is excessive weathering of building exteriors due to the use of materials not intended for exterior use, e.g. press board and plywood intended for interior use. The only structures in which such deterioration was not present to a notable degree are the Changing Room, the two bridge structures and the Pirate Ship.

With the exception of the Changing Room, the two bridge structures, and the Pirate Ship, the buildings lack proper foundations and foundation connections. Additionally none of these buildings appear to meet any construction standard and lack basic load

path elements for lateral load resistance such as hold-downs and strapping at framing discontinuities.

Architectural*

In addition to the accessible paths of travel described above, the Mining Shack and the Changing Room buildings are also required to comply with the California Building Code (CBC) accessibility standards contained in Chapter 11B. This would include accessible entrances and an accessible route of travel to all elements and spaces within the building.

Accessibility standards for entrances require the following:

- ramp having a slope of 1:12 or less to the elevated floor elevation
- level landings on either side of threshold with a maximum threshold or landing to landing offset of ½ inch.
- 32 inch clear opening width
- 60 inch landing on the pull side with an 18”(interior) or 24” (exterior) strike edge
- 48 inch landing on the push side with a 12” strike edge if door has latch and closer.

Accessibility standards for building interiors include the following:

- Changes in floor level not to exceed ½ inch without a ramp.
- Clear width of 36” connecting areas with turning radii per CBC fig 11B-5E.

The Mining Shack lacks a ramp to the raised floor elevation and the entry door is a sliding door which does not meet the door standards contained in section 1133B.2.5 of Chapter 11B for opening force. Two barriers exist within the interior- a 1-1/2 inch threshold at one of the door ways which also provides only a 29 inch clear passage way not meeting the 36 inch clear width standard.

The Changing Room building lacks proper landings at each entry and the non-compliant pairs of swing doors are required to be replaced with single 3’0” doors mounted in such a way as to provide the 32” clear opening widths in the open position. Each room requires a changing room sized to provide a 60 x 60 inch clear floor space to meet accessibility standards of section 1117.B.8 of the CBC.

*The above comments are limited to only California Building Code Accessibility standards as they relate to specific structures, consideration of California Playground Safety regulations are not included within this Building and Safety Review.

Buildings/Structures Summary

Renewed use of the Changing Room, the two bridges, and the Pirate Ship is not recommended due to their non-compliance with state Title 24 and federal Americans with Disabilities Act accessibility requirements.

In their current state, the remainder of the buildings should also be considered unsuitable for renewed use. The unconventional construction, the degree of termite damage, dry rot, deterioration, and non-compliance with state Title 24 and federal American with Disabilities Act accessibility requirements makes the buildings' use both a potential safety hazard and legal liability.

**ADVENTURE PLAYGROUND
SUMMARY OF FINDINGS BY BUILDING**

Building	Construction Issues				Interior Modifications for T24 Compliant Accessible Route Required	T24/ADA Accessible Entry Required	T24/ADA Accessible Path Required	T24/ADA Accessible Entry Required	Interior Modifications for T24 Compliant Accessible Route Required	Foundation Required	Dry Rot Termite Damage	Structural Strengthening Via Analysis/Design	Weatherize exterior
	T24/ADA Accessible Path Required	T24/ADA Accessible Entry Required	Interior Modifications for T24 Compliant Accessible Route Required	Foundation Required									
Mining Shack 20' x 37' irregular	Yes- including a ramp and landing to raised floor.	Yes-sliding entry door, opening force excessive. *Miscellaneous Concern: Exposed electrical wiring that should be de-energized until the installation is made safe.	Yes-Interior door provides only 29 inches versus required 32". Also 1-1/2 inch threshold at interior door.	Yes	Yes-excessive	Yes-Building consists of a mixture of framing at least two roof spans are supported by telephone poles acting as columns and beams. Exterior bearing walls are studs. No lateral load resisting elements	Painted plywood likely not rated for exterior use. Some warping and delamination noted. Remainder of siding is board and batten type which appears to be in fair condition. Termite infestation likely due to lack of proper earth to wood separation.						
Small Bridge	No	n/a	(1)	n/a	None noted	n/a	n/a						
Jail and Sheriff 16' x 22' irregular	(2)	(2)	(1)	Yes	Yes-excessive	Yes-two story structures connected by a bridge. No lateral load resisting elements	Yes- plywood not rated for exterior use. Delamination at roof and walls.						
Federal Store 12' x 12'	(2)	(2)	(1)	Yes	Yes-excessive	No-minor structure. Build/repair to conventional framing standards	Yes- plywood not rated for exterior use. Delamination at roof and walls.						
Pirate Ship	Yes	n/a	(1)	No	None noted	No	No						
Builder's Corner Brown Bldg	(3)	(3)	(1)	Yes	Yes-excessive	No-minor structure.	Yes- plywood not rated for						

Big Bridge	Yes	n/a	(1)	n/a	have been done adjacent to this hole in an apparent attempt to cover another area of dry rot	n/a	n/a	
Changing Room 22' x 23'	Yes- including landings at each entry door	Yes- two entry doors would require properly sized landings and 3'0" swinging doors to replace the pairs of double swinging doors.	Open interiors are adequate but at least one changing stall in each changing room would need to be enlarged to accessibility standards	No-foundation appears to be made to conventional standards	None noted	Some loose nailing of floor planks noted. Also some weathering-minor.	Yes- building is in fair condition and appears relatively new. Anchor bolts provided at reasonable spacing and straps embedded in the foundation occur in six locations. Analysis and design recommended to justify existing and supplement where deficiencies revealed.	Exterior plywood is exposed to the weather and unless exterior rating can be provided should be protected from the weather via building paper and stucco or other.

- (1) As a play component, accessibility considerations and architectural and safety play component standards within or on the structure are beyond this review.
- (2) Per the report above one of these buildings (Jail-Sheriff or Federal Store) should be provided with an accessible path and a ramp and landing to its raised floor.
- (3) Per the report above one of these buildings in the Builder's Corner should be provided with an accessible path and a ramp and landing to its raised floor.

