

OCULAR INSPECTION CHECKLIST

Where description is indicated, attach additional pages of notes and photographs keyed to appropriate checklist item.

A. GENERAL INFORMATION

1. Street Address of the School:

City: Sabana Grande

*Carr. 368 Km 1.0 P.O. Machuchal
P.O Box 368*

State: P.R

Zip: 00637

2. School Name: Luis Nagón López (Superior-Vocacional)

(787) 804-2036

3. Date of inspection: 8 Febrero 2020

4. Inspector's Name: Ing. José M. Soto Rosario

B. BUILDING SITE INSPECTION

5. Utility Service Safety:

IMPORTANT—Immediately following an earthquake, check the entire property, especially near appliances, for the smell of gas. If gas odor is detected, turn off the gas at the meter where it enters the building. Locate and repair leaks before turning gas back on. If the gas odor persists after the gas has been shut off, vacate the building and contact the gas utility company immediately.

IMPORTANT—Before entering a damaged, vacant building verify that gas is off. Check the gas meter for damage and position of main gas valve, either a manual valve or a seismically-activated gas shut-off valve. Do not enter the building if gas odor is detected.

a. Odor of gas leakage? YES NO b. Downed powerlines? YES NO

6. Surrounding topography: (check one)

- Flat
- Gently sloping (easily walkable)
- Steeply sloping (difficult or impossible to walk in some areas)

7. Building pad: (check one)

- Flat
- Terraced or multilevel
- Gently sloping (less than 4-foot ground surface elevation difference across building)
- Steeply sloping (greater than 4-foot ground surface elevation difference across building)

8. Geotechnical Issues: (if yes, provide description and photos)

- | | YES | NO |
|---|--------------------------|-------------------------------------|
| a. New cracks in the ground? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. Signs of fresh cracking in or movement of hardscape? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c. Signs of fresh cracking in or movement of retaining walls? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d. Patterns of cracking that extend through the ground surface, hardscape, and improvements? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e. Evidence of sand boils or other fresh-appearing deposits of sand or mud? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f. Unusual slumping, rising, or bulging of the ground surface? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g. Evidence of rock falls or slope instability above site? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| h. Ground movement or wet areas indicating possible broken underground utility lines? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| i. Other phenomena (e.g., septic tanks surfacing, differential settlement, ground consolidation)? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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B. BUILDING SITE INSPECTION (continued)

YES NO

9. Evidence of earthquake-induced permanent ground deformation in the immediate vicinity of the property?

C. GENERAL BUILDING INFORMATION

10. Safety Assessment Tag: (check one) None Green Yellow Red
 (others): Yellow Red

11. a) Year of original construction (best estimate): 2005
 b) Total square footage (best estimate): 32,000

12. Have any repairs, modifications, or demolition been performed since the earthquake?

YES NO

If yes, describe _____

13. Building configuration:

- a. Single story
- b. Combination one and two story
- c. Full two story
- d. Three story
- e. Split level
- f. Typical
- g. Other, describe Four Story

16. Sill bolting:

- a. Structure bolted to foundation
- b. Structure not bolted to foundation
- c. Don't know

14. Exterior wall finish:

- a. Stucco
- b. Panel siding
- c. Metal siding
- d. Masonry veneer
- e. Other, describe Concrete

17. Roof configuration:

- a. Gable
- b. Hip
- c. Flat or very low slope
- d. Shed
- e. Other, describe Concrete

15. Foundation configuration:

- a. Slab-on-grade
- b. Crawl space without cripple walls
- c. Crawl space with cripple walls
- d. Exposed piers or posts
- e. Typical
- f. Metal
- g. Other, describe _____

18. Roof covering:

- a. Asphaltic membrane
- b. Wood shingle or shake
- c. Concrete
- d. Metal
- e. Elastomeric
- f. Other, describe Concrete

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D. EXTERIOR BUILDING INSPECTION

	YES	NO	N/A
19. General: (if yes, provide description and photos)			
a. Collapse, partial collapse, or building off foundation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b. Obvious lean in any story?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
20. Exterior walls: (if yes, provide description and photos)			
a. Fresh cracking at corners of door and window openings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Fresh cracking at building corners? <i>old</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Door or window openings racked out of square?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Broken glass in windows or doors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Wall leaning?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Bulging or delamination of stucco? <i>old</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
g. Pattern of cracking that extends from the ground surface, through foundation, and wall?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
h. Evidence of recent relative movement at mudsill line?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
i. At locations where the exterior stucco is continuous from the framing down over the foundation, is there cracking of stucco along the mudsill level accompanied by indications of permanent displacement (sliding) of the building relative to the foundation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j. Collapse, partial collapse, or separation of masonry veneer?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
k. Severe cracking, separations, or offsets at building irregularities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Foundation: (if yes, provide description and photos)			
a. Fresh cracking of exposed perimeter foundation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b. Relative movement between slab and footing in "two-pour" slab-on-grade foundations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Ask occupant if any earthquake retrofits have been done to the building?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If Y describe: _____			
d. If the answer to c is Y, were bolts added to connect the building to the foundation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. If the answer to c is Y, were plywood or sheathing added to any cripple walls under the building?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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D. EXTERIOR BUILDING INSPECTION (continued)

	YES	NO	N/A
22. Kitchen Hook (if yes, provide description and photos)			
a. Present on external wall?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Present at internal location?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Collapse or partial collapse?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Visible damage or <u>cracking</u> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Visible tilting or separation from building?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Shifted or loose and displaced	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Deterioration or deformation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
23. Roof: (if yes, provide description and photos)			
a. Shifted or dislodged or concrete damage?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Impact damage to roof from falling object?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Displaced rooftop HVAC units?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Significantly sagging roof ridgelines?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Signs of movement between rafter tails and wall finishes at eaves?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Buckled/dislodged flashing or tearing of roof membrane, roof/wall intersections in split level buildings, additions, or other building irregularities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Tearing of roof membrane or deck waterproofing at re-entrant corners?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h. Toppling, shifting, or damage/leakage at refrigerant and electrical lines of rooftop mechanical equipment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i. Shifting of or damage to solar panels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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D. EXTERIOR BUILDING INSPECTION (continued)

		YES	NO	N/A
24.	Attached or abutting improvements: (if yes, provide description and photos)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
a.	Collapse, partial collapse, or separation of attached porches, carports, Gazebos, or awnings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b.	Evidence of recent settlement or displacement of exterior steps, patios, or walkways relative to the building?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c.	Signs of movement between building floor and/ or exterior hardscape or retaining wall along the uphill side of hon steeply sloping sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d.	Toppling, shifting, or damage/leakage at refrigerant and electrical lines of air conditioning condenser unit(s)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
25.	Independent exterior improvements: (if yes, provide description and photos)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
a.	Damaged detached gazebo?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	Damage to fences / privacy walls?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c.	Damage to retaining walls?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d.	Damage to walkway?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e.	Evidence of leakage from water supply lines?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f.	Toppling, shifting, or damage/leakage at fuel connection of propane tanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g.	Others damage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

E. INTERIOR INSPECTION

26. General information

- a. If interior access not possible, identify reason
- i. Red tag
 - ii. Hazardous materials
 - iii. Other hazardous condition, describe _____
 - iv. Other, describe _____

- b. Typical wall and ceiling finish
- i. Drywall
 - ii. Plaster on gypsum lath
 - iii. Plaster on wood lath
 - iv. Other, describe _____ Concrete

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E. INTERIOR INSPECTION (continued)

		YES	NO	N/A
27. Walls: (If yes, provide description and photos)				
a. Fresh cracking, buckling, spalling, or detachment of interior wall finish at <u>corners of door and window openings?</u> <i>old</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b. Fresh cracking of wall finishes at wall corners or wall/ceiling intersections?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c. Door or window openings racked out of square?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
d. Wall leaning?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
e. Pattern of cracking that extends from the floor slab through the wall?	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
f. Movement or sliding of walls relative to the floor?	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
g. Severe cracking, separations, or offsets at building irregularities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
h. Doors damaged, difficult to operate, or inoperable?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
i. Windows damaged, difficult to operate, or inoperable?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
28. Ceilings: (if yes, provide description and photos)				
a. Collapse of ceiling finish?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
b. Fresh cracking of ceiling finishes, especially at re-entrant corners; cracks along corner bead at stairwell openings; cracking or tearing of finishes at ceiling/wall juncture; or multiple "nail pops"? <i>old</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c. Damage to ceiling finishes in vicinity of corridors or commons places?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d. Separations or cracks in ceiling finishes at split-levels, re-entrant corners, additions, appendages, or other building discontinuities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
e. Water damage or evidence of recent leakage from plumbing lines or roofing?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

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E. INTERIOR INSPECTION (continued)

		YES	NO	N/A
29.	Floors: (if yes, provide description and photos)			
a.	Evidence of recent sloping, sagging, settlement or displacement of floors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	In slab-on-grade locations, fresh cracking of floor slab or floor finishes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c.	Significant sagging or unusual bounciness of floors frames?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d.	Separations or <u>cracks in floor finishes</u> at split-levels, re-entrant corners, additions, appendages, or other building discontinuities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	Signs of movement between floor and exterior hardscape or retaining wall along the uphill side of buildings on steeply sloping sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f.	A pattern of fresh cracks, gaps, or joint separations in floor finishes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g.	Impact damage to floor finishes from falling contents?			
30.	Mechanical systems: (if yes, provide description and photos)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
a.	Displaced connection of appliance flues connected to chimneys?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	Toppling, shifting, leakage from tank, leakage from water connections displaced flue connection or damage/leakage at gas line or electrical connection of water heater?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c.	Shifting, damage/leakage at gas line, flue connection, electrical connection, refrigerant line, and condensate drain connection of furnace or air conditioning fan-coil unit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d.	Damage to gas line of gas stoves or gas fueled clothes dryers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e.	Damage to toilets?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f.	Decreased or restricted water pressure at appliances, faucets, or toilets?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g.	Toppling or shifting of free-standing wood stove and/or flue?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h.	Toppling, shifting, damage/leakage at fuel connection of fuel oil tank?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i.	Other Damage in the dining room	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j.	Damage near the gas tank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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E. INTERIOR INSPECTION (continued)

- | | | | |
|---|--------------------------|-------------------------------------|--------------------------|
| 31. Architectural woodwork and special finishes: (if yes, provide description and photos) | YES | NO | N/A |
| a. Shifting of or damage to kitchen or bathroom cabinetry? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. Impact damage to countertops from falling objects? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c. Cracking of ceramic tile in showers or tub/shower enclosures consistent with
earthquake damage to adjacent wall finishes? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

F. CONTINGENT INSPECTIONS

- | | | | |
|--|--------------------------|-------------------------------------|--------------------------|
| 32. Retaining Tank Wall damage? | YES | NO | N/A |
| 33. Water tank or other field subterranean structure | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

OCULAR INSPECTION CHECKLIST

G. RECOMENDACIÓN AL SECRETARIO

Departamento de Educación
Dr. Eligio Hernández Pérez
Secretario de Educación

Hora de Entrada a Inspección:	10:20 AM	Hora de Salida de Inspección:	1:45 PM
Escuela:	LUIS NEGRON LOPEZ	Código:	48264
Municipio:	SABANA GRANDE	Fecha de Inspección:	8 de febrero de 2020

- Abrir Escuela (Verde)
- Abrir Parcialmente la Escuela (Amarillo)
- No Abrir la Escuela (Rojo)

Comentarios:

La Escuela Luis Negron Lopez está compuesta por edificio de cuatro niveles y 60 salones de clases, comedor, la biblioteca y una cancha techada. La escuela es Superior y Vocacional. El sistema estructural de los edificios para salones de clases consiste en un sistema de pórticos, "Frame", de vigas y columnas las cuales soportan varios pisos y un techo de hormigón.

Luego de realizar la inspección visual al plantel de la escuela, se observó que los elementos estructurales de los edificios no presentaban daños visibles relacionados con los eventos sísmicos registrados recientemente. Las mismas se encuentran en buenas condiciones.

Hay grietas en varios lugares a travez de toda la estructura. En las ventanas en el primer piso corren paralela a las columnas, pero no son de tipo "short column". Dan la impresion de ser una pared de bloques que se despega de la columna.

Casi todas las Juntas estan rotas y requieren reemplazarse.

El almacen del salon de arte tiene grietas en la columna, viga despega. La union de la viga y la columna demuestran esfuerzos en tension absorbidos por el acero en el momento negativo. RECOMIENDO EL CIERRE DEL ALMACEN DE ARTE.

El grupo de salones del 401 al 408 tienen grietas en las ventanas que hay que observarlas. las grietas no son estructurales, por lo tanto, no afecta la estabilidad estructural del edificio. El comedor tiene grietas en las vigas hacia el techo y filtracion cerca de las nevera. La cobacha del comedor tiene grietas en las ventanas , techo y paredes. Hay una viga que demuestra un esfuerzo cortante en el area cerca de la columna donde la cantidad de los arcos estructurales es mayor. Cerca hay una pequeña oficina. Recomendamos mucha precaucion a los empleados que tengan que entrar alli.

Se debe entender que este informe está basado solamente en una inspección ocular de las facilidades con el propósito de observar en las escuelas la presencia de daños significativos causados por los eventos sísmicos registrados hasta la fecha de este informe. La determinación de la adecuación estructural de las escuelas y su cumplimiento con los códigos aplicables de diseño o construcción, al igual que el desarrollo de recomendaciones para la rehabilitación de las facilidades, requerirá una evaluación detallada.

JOSE M. SOTO ROMERO

Nombre (Firma de Molde)



Firma

Digitally signed by Jose M. Soto Romero
DN: c=US, st=Puerto Rico, o=Colegio de Ingenieros y
Agrimensores de Puerto Rico, title=7072 PE, cn=Jose
M. Soto Romero, email=jmsotor@bcoesign.com
Location: josesoto73@aol.com
Date: 2020.02.09 18:40:55 -04'00'

7072 PE
Licencia

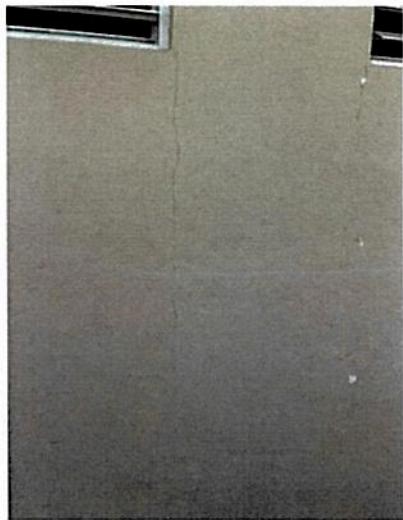


Digitally signed by Jose M. Soto Romero
DN: c=US, st=Puerto Rico, o=Colegio de Ingenieros y Agrimensores de Puerto Rico, title=7072 PE, cn=Jose M. Soto Romero,
email=jmsotor@bcoesign.com
Location: josesoto73@aol.com
Date: 2020.02.09 18:40:17 -04'00'

Sello









Digitally signed by Jose M. Soto
Romero
DN: c=US, st=Puerto Rico, o=Colegio
de Ingenieros y Agrimensores de
Puerto Rico, title=7072 PE, cn=Jose M.
Soto Romero,
email=jmsotor@bioesign.com
Location: josesoto73@aol.com
Date: 2020.02.09 18:40:17 -04'00'