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SUPERIOR COURT OF THE STATE OF WASHINGTON
IN AND FOR THE COUNTY OF SPOKANE

SPOKANE RESEARCH & DEFENSE FUND,

Plaintiff,

vs.

RIVER PARK SQUARE PARKING GARAGE,
a public parking garage in downtown Spokane,
Washington; RIVER PARK SQUARE LLC, a
Washington limited liability company; RIVER
PARK SQUARE INVESTMENT COMPANY, a
Washington limited liability company; Cowles
Co., a Washington corporation; and CITY OF
SPOKANE, a Washington first class home rule
charter city,

Defendants.

06-2-01896-1

No. 06-2-00065-6

[AMENDED COMPLAINT]

DECLARATORY JUDGMENT:
IS THE RIVER PARK SQUARE
PARKING GARAGE A PUBLIC
NUISANCE?

COMPLAINT TO ABATE
PUBLIC NUISANCE

PETITION FOR WRIT OF
MANDAMUS

ORIGINAL

Plaintiff alleges:

PARTIES

1. Spokane Research & Defense Fund is a Washington nonprofit corporation (SRDF).
2. Included within the membership of SRDF is a person who uses the River Park Square
Parking Garage.

- 1 a. The person uses the River Park Square Parking Garage on a frequent – more or
2 less weekly -- basis. Sometimes the weekly use is several times a week.
3
4 Sometimes the use is more than once in a day.
5
6 b. Such member also uses the ground level area outside the north walls of the River
7 Park Square Parking Garage by use of the sidewalk beneath the wall and by use of
8 the entrance and exit from the garage beneath the north walls.
9
10 c. Such member is also the father of a teenage child who is starting to drive and soon
11 will be fully licensed to drive.
12
13 d. Such child goes to River Park Square regularly to shop, dine out, be with friends,
14 attend movies, and use the Spokane Public Library. No doubt, such child, when
15 driving, will park in the River Park Square Parking Garage.
16
17
18

19 3. The River Park Square Parking Garage is owned by River Park Square LLC, a
20 Washington limited liability company.
21

22 4. River Park Square Parking Garage is managed by River Park Square Investment
23 Company, a Washington limited liability company.
24

25 5. River Park Square LLC and River Park Square Investment Company are wholly
26 owned by the Cowles Co., which also owns The Spokesman-Review, Spokane's only local daily
27 newspaper.
28
29

30 6. Cowles Co. has the power to control the River Park Square Parking Garage and to
31 cause the actions sought to have the court take herein to be implemented by River Park Square
32 Investment Company and River Park Square LLC.
33
34

35 7. City of Spokane, is a Washington first class home rule charter city.
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VENUE AND JURISDICTION

8. Each of the Defendants does business in Spokane County, Washington.

9. The court has jurisdiction of these proceedings because the River Park Square Parking Garage is located in Spokane County, Washington.

10. The court has jurisdiction of these proceedings under and pursuant to the Washington Declaratory Judgments Act, RCW 7.24.

11. The court has jurisdiction over these matters under the common law of nuisance, public and private, and the abatement of nuisances, public and private of the State of Washington.

12. The court has jurisdiction over these matters under the provisions of RCW Ch. 7.16.

BASIC FACTS

13. River Park Square Parking Garage is a public parking garage in downtown Spokane, Washington.

14. The River Park Square Parking Garage is a part of River Park Square.

15. River Park Square is a shopping mall located between Main Street and Spokane Falls Boulevard in downtown Spokane, Washington. It is bordered on the west by Lincoln Street and on the east by Wall Street.

16. The River Park Square Parking Garage is used each day of every successive week from morning to late evening by thousands of people who use the facility for vehicle parking in order to come to downtown Spokane, to shop, see movies, go to the Spokane Public Library, visit friends, go to Riverfront Park, attend to business and attend meetings at the Spokane City Hall, to name only a few of the purposes for which people use the parking garage.

1 17. The Spokane City Hall is connected by a “skywalk” to the garage.
2

3 18. The garage is connected by elevators and second level access to skywalks which
4 provide inside connections to all of the major buildings in Downtown Spokane.
5

6 19. The garage is connected to the public streets of the City of Spokane.
7

8 20. The River Park Square Parking Garage is connected to all other city blocks and
9 buildings in the downtown core of the City of Spokane by an elaborate system of skywalks from
10 buildings to buildings in the downtown core.
11

12 **RIVER PARK SQUARE PARKING GARAGE**

13
14 21. The River Park Square Parking Garage is made up of a parking level or area below
15 grade under the Nordstrom Store, located in one of the condominium units of the River Park
16 Square Condominium, and several levels of parking decks located above street grade.
17

18
19 22. The River Park Square Parking Garage is one of the condominium units in the River
20 Park Square Condominium.
21

22 23. Each parking deck located above street grade is open to the outside.
23

24 24. The outside of each parking deck is completed by a series of precast concrete panels.
25

26 25. These panels are referred to by experts who have inspected the River Park Square
27 Parking Garage as “spandrels.”
28

29 26. The panels are indeed spandrels and nothing more.
30

31 27. A spandrel is merely a piece of architectural decoration; a spandrel has no functional
32 purpose.
33

34 28. Each spandrel consists of a horizontal portion which extends outward from its
35 attachment to the parking deck a foot or more where it then curves upward to a height of about
36

1 four feet.

2
3 29. Where the spandrel curves is not where the spandrel is attached to the parking deck.
4 The attachment to the parking deck is about 1.5 feet from the radius of the spandrel curve.

5
6 30. Looking at a spandrel from a side perspective, the spandrel appears to look like an
7
8 equal sided "L."

9
10 31. Each spandrel is about five to five and a half inches thick. Each spandrel is about
11 nine feet wide.

12
13 32. Each spandrel is reinforced with steel rebar – that is, steel rods with ridges for use in
14 reinforced concrete.

15
16 33. Each garage spandrel used in the construction of the garage appears to be the same as
17 every other spandrel.

18
19 34. There are roughly 340 spandrels in use in the garage.

20
21 35. Apparently, the spandrels are expected to serve as a safety barrier, or wall, to prevent
22 vehicles parking in the garage from accidentally rolling off and falling off the garage parking
23 decks.

24
25
26 36. Those who park vehicles in the River Park Square Parking Garage expect and
27 reasonably so that each spandrel will form a safety barrier to prevent vehicles parking on the
28 parking decks from accidentally driving off a garage parking deck.

29
30
31 **AREAS BELOW THE SPANDRELS – THE PARKING DECKS**

32
33 37. The spandrels are located above the pedestrian sidewalk on the south side of Spokane
34 Falls Boulevard, immediately adjacent to the River Park Square Condominium.

35
36 38. The sidewalk area, an area immediately below the spandrels is used from time to

1 time for restaurant purposes by Rock City Grill located on the main floor of River Park Square.
2

3 39. Some of the spandrels are located above the Spokane Falls Boulevard vehicle
4 entry/exit into and out of the garage. Spokane Falls Boulevard vehicle entry/exit is the only exit
5 from the garage.
6

7 40. Spokane Falls Boulevard vehicle entry/exit is not the only entrance – another
8 entrance is on Lincoln Street consisting of a ramp down from the street into the garage area under
9 the Nordstrom Store.
10
11

12 **HISTORY OF RIVER PARK SQUARE PARKING GARAGE**

13 41. The garage was originally built circa 1974.
14

15 42. It was seven stories high as an elevated structure.
16

17 43. Originally, the garage had “spandrels” on the north and south sides of the parking
18 decks making up the seven levels of parking.
19

20 44. The garage was renovated and added to, circa 1998 - 1999.
21

22 45. At that time, the south wall of the garage was replaced with a concrete wall.
23

24 46. Many of the spandrels no longer necessary on the south side were moved to and used
25 on the north side and as part of the expansion of the garage, during which additional floors were
26 added to the garage.
27

28 47. Some of these spandrels were used to replace failed or deteriorated panels in place on
29 the north side of the garage.
30

31 **THE TRAGIC DEATH OF JO SAVAGE**

32 48. On Saturday, April 8, 2006 about 12:00 noon, one of the spandrels attached to the
33 parking deck of the fifth floor of the River Park Square Parking Garage was bumped by a slow-
34
35
36

1 moving Subaru driven by Jo E. Savage of Pullman, Washington.

2
3 49. Mrs. Savage was known to be a cautious driver.

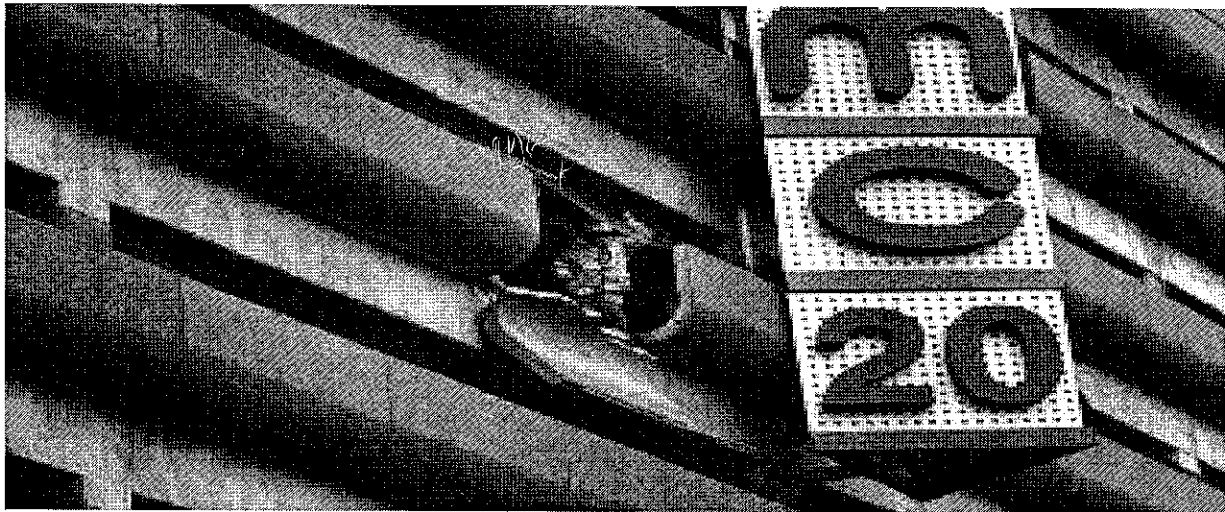
4
5 50. At the time of her death, Mrs. Savage was 62 years of age and the mother of a son in
6 his twenties.

7
8 51. Mrs. Savage was a longtime employee of Washington State University in Pullman,
9 Washington. She served as the art director of Washington State Magazine, a regular major
10 publication of WSU. (<http://washington-state-magazine.wsu.edu/>).

11
12 52. She received a Master's Degree in Fine arts from WSU in 1970.

13
14 53. The Subaru weighed about 3,400 pounds.

15
16 54. The spandrel broke and the upright part, the wall part, flipped outward and down.



30 **Figure 1**

31
32 55. The spandrel, broken, hung from the deck of the garage, the final failure prevented by
33 bent rebar holding the pieces of the spandrel together. Figure 1.

34
35 56. Figure 1 is a picture taken the day of the accident and published in the Spokesman-

1 Review, Spokane's local daily newspaper.
2

3 57. The figure shows a firefighter standing over the failed spandrel.
4

5 58. The Subaru and Mrs. Savage fell several stories to the parking ramp on Spokane
6 Falls Blvd.
7

8 59. The vehicle landed upside down.
9

10 60. Mrs. Savage was trapped inside the vehicle.
11

12 61. Severely injured, she died after few hours.
13

14 62. Her death was painful.
15

16 **PARKING GARAGE CONDITION REPORTS**

17 63. Reports on the River Park Square Parking Garage from 1996, 2002 and 2003 raised
18 issues about the structural integrity of the Garage and the condition of the spandrels.
19

20 64. The most recent report is known as the Jacobson Study.
21

22 **PAST SPANDREL FAILURES**

23 65. The failure of a River Park Square Parking Garage spandrel on April 8, 2006, the one
24 which failed causing the death of Mrs. Savage, is not the first time a garage spandrel has failed.
25

26 66. A River Park Square Parking Garage spandrel failed in 1991 (or maybe 1990)
27 according to the local daily newspaper.
28

29 67. Unreported by the local daily newspaper at a time when its subsidiary companies
30 were redeveloping the River Park Square Parking Garage, another garage spandrel failed circa
31 September 1999.
32

33 68. At that time a woman driving a black colored vehicle bumped one of the spandrels.
34

35 69. The location of the spandrel was across from City of Spokane City Hall on Spokane
36

1 Falls Boulevard.

2
3 70. At the time, Goebel Construction Company was doing the reconstruction of the
4 garage.

5
6 71. The woman's car nearly fell off the deck of the garage. When it came to a stop, its
7 front wheels were off the horizontal portion of the spandrel attached to the parking deck.

8
9 72. An official of the parking garage was on the scene as were two employees of Goebel
10 Construction.

11
12 73. The official of the parking garage reportedly said, at the time in response to the car
13 having gone off the parking deck, "Someone could get killed."

14
15 74. One of the construction company employees heard the comment "someone could get
16 killed" made by the employee of the garage.

17
18 75. The two construction company employees were instructed to place a plywood barrier
19 at the scene.

20
21 76. They in fact did so.

22
23 77. There is reason to presume the other spandrels in the garage might also fail if a
24 vehicle runs into a spandrel.

25
26 78. We know of two reported failures. And, there is likely a third – see the paragraphs
27 immediately above.

28
29
30 **WHY DID THE SPANDEL FAIL TO PROTECT JO SAVAGE?**

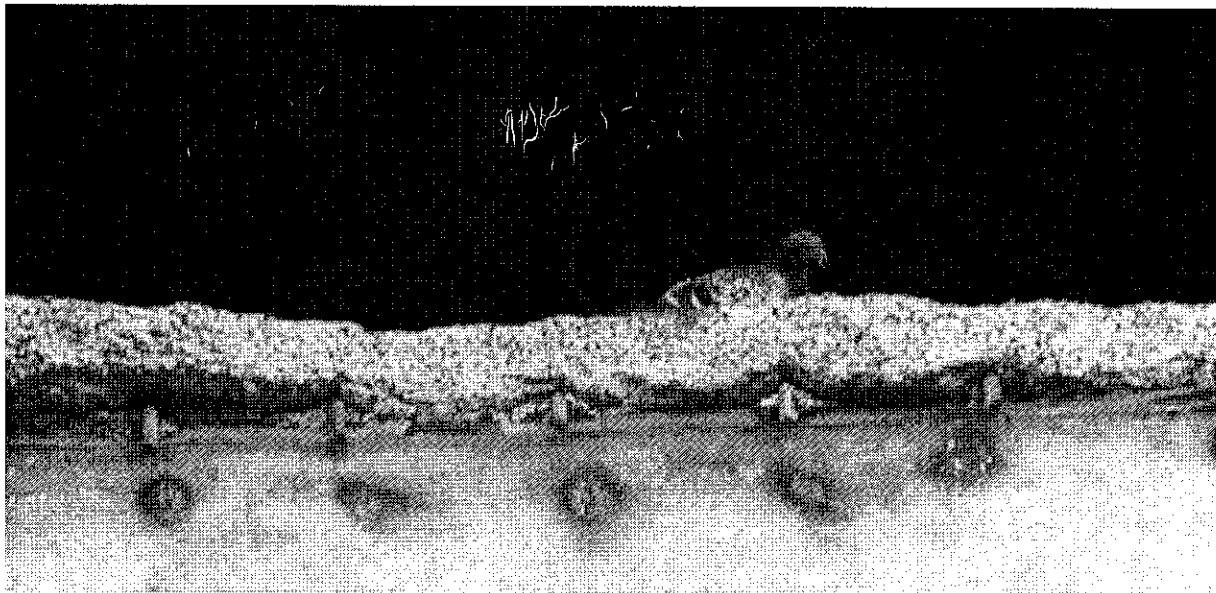
31
32 79. The rebar, as it appears from examination of the spandrel which failed, is located
33 between the outer edge of the spandrel – the edge facing out from the River Park Square Parking
34 Garage deck area – and the "neutral axis" of the spandrel. See Figure 3.

1 80. Plaintiff asserts the rebar is located on the wrong side of the neutral axis of the
2
3 spandrel. See Figure 3.

4 81. The rebar is located on the outside of the “neutral axis” of the spandrel. The neutral
5
6 axis is an imaginary line equidistant from the outer surfaces of the spandrel.
7

8 82. The rebar should have been located on the inside of the neutral axis of the spandrel.

9 83. Look at Figure 2. This picture shows part of the failed spandrel which is still
10



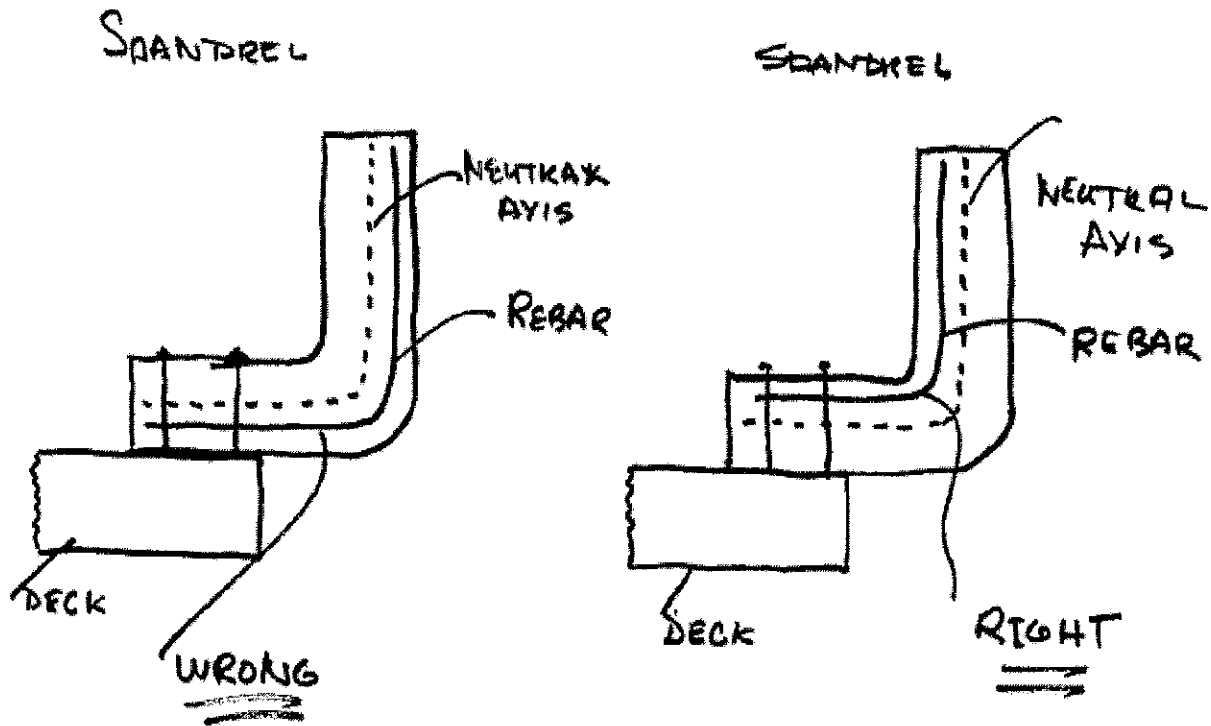
26 **Figure 2**

27 attached to the parking deck of the garage. The picture was taken the night of May 1, 2006 by
28
29 the undersigned attorney for Plaintiff.

30 84. The picture clearly shows that the rebar is located on the bottom of the spandrel (the
31
32 outside side of the spandrel) and not the top (the inside side of the spandrel).
33

34 85. Common sense shows that the rebar on the outside of the curved part of the spandrel
35
36 does nothing to prevent the spandrel from breaking on the inside of the curved part of the

1 spandrel as a result of force from a moving vehicle. See Figure 3.
2
3
4



21 Figure 3

22
23
24
25
26 **WHAT TO EXPECT IN THE FUTURE**

27
28 86. Doubtless in future, drivers of other vehicles will experience one of their vehicles
29 hitting a spandrel.

30
31 87. Experience clearly proves this future possibility.

32
33 88. It is a fact yet to happen.

34
35 89. In such an event, it is likely the vehicle and its driver and other occupants, if any, will
36 fall from the parking deck to the sidewalk below or the entry/exit below.

1 90. If such a fall takes place, there will likely be further loss of life and great suffering.

2
3 91. Such loss of life and injury will include the people in the vehicle and people on the
4 sidewalk below the garage or the ramp area into and out of the garage.
5

6 92. The court should decide whether the spandrels create conditions of danger such that
7 the River Park Square Parking Garage is or has become a public nuisance.
8

9 93. If the court decides the River Park Square Parking Garage is a public nuisance, the
10 court should take action to cause the dangerous conditions of the garage to be abated.
11

12
13 **NOTHING HAS BEEN DONE BY THOSE IN CONTROL OF THE GARAGE - CONTROVERSY**

14 94. The parties in possession and/or having control of the River Park Square Parking
15 Garage have done nothing since the death of Jo Savage on April 8, 2006 to prevent someone else
16 from bumping a spandrel and experiencing the failure of a spandrel.
17

18
19 95. The City of Spokane has been asked to take action.
20

21 96. A lawyer for the Family of Jo Savage has asked the City to take action on two
22 occasions, but the City has refused or at least as of the date of this Complaint, has not taken
23 action.
24

25 97. The City has taken no action.
26

27 98. The only thing the City has done is to call for a hearing with the people in control of
28 the Parking Garage.
29

30 99. This meeting took place on May 17, 2006 at 1:30 P.M.
31

32 100. The meeting was over within 15 - 20 minutes.
33

34 101. At the time of the meeting, a Mr. Richard A. Dethlefs, P.E., S.E. "Project Engineer"
35 for Wiss, Janney, Elstner Associates, Inc., presented a summary of a report he and his firm had
36

1 provided to one of the attorneys for the Defendants, William D. Symmes of Witherspoon, Kelley,
2
3 Davenport & Toole.

4 102. A copy of the report is attached hereto and incorporated herein as Exhibit A.

5
6 103. The meeting on May 17, 2006 amounted to nothing – to no action, to no
7
8 independent undertaking on the part of the City.

9 104. It concluded with Mr. Wizner, the city building official thanking the Defendants for
10
11 the report and praising the Defendants for the steps they were taking with regard for the garage.

12 13 **COUNT I**

14 **COURT MUST DECLARE, DETERMINE AND ACT TO ABATE NUISANCE**

15
16 105. The court must act to protect the health and safety of the people who use the River
17
18 Park Square Parking Garage.

19 106. There are controversies between Plaintiff and Defendants as to the matter herein,
20
21 whether the River Park Square Parking Garage in its current condition is a public nuisance.

22 107. The court should make declaratory judgment or determinations as to such matters.

23
24 108. In addition, the court should take such action as necessary and meet to abate the
25
26 conditions of the garage which make the garage a public nuisance. *See* RCW 7.24.080.

27
28 109. The Defendants, and each of them, have power to respond to any order the court
29
30 might issue to cause abatement of the conditions of the garage which make the garage a public
31 nuisance.

32 **COUNT 2**

33 **COURT SHOULD ISSUE WRIT OF MANDAMUS TO CITY OF SPOKANE**

34
35 110. Time is of the essence – a person or persons could become injured or die in the
36

1 event of another failure of a River Park Square Parking Garage spandrel to prevent a vehicle
2 from falling off one the decks of the Garage.
3

4 111. There have been two reported spandrel failures to prevent vehicles from falling off
5 the garage parking decks.
6

7 112. Another has been reported to the undersigned attorney by an employee of the
8 company actually doing the renovation to the garage in 1998 - 1999.
9

10 113. The WJE report confirms the two failures.
11

12 114. The WJE report confirms that the spandrel which failed was constructed so that the
13 rebar in the panel was on 1.35 inches from the tension surface of the panel when it should have
14 been on the opposite side of the neutral axis of the panel on the compression surface, or at least at
15 the neutral access.
16

17 115. There has been no firm study of the characteristics of the over 300 spandrels in
18 place at the garage.
19

20 116. The garage, in order to have obtained a certificate of occupancy as the barriers of
21 the parking decks, had to comply with the building code in place when the garage was renovated
22 – the Uniform Building Code, 1997. See the WJE Report, Exhibit A at page 3 second full
23 paragraph.
24

25 117. It is said that the code to have been complied with is similar to the code in place
26 today for “vehicle barriers” – that is, International Building Code (IBC) §1607.7.3. Exhibit A.
27

28 118. The 1997 UBC is not at all like IBC §1607.7.3 code.
29

30 119. IBC §1607.7.3 provides:
31

32 The IBC defines “vehicle barriers” as follows:
33
34
35
36

1 §1607.7.3 Vehicle barriers. Vehicle barrier systems for passenger
2 cars shall be designed to resist a single load of 6,000 pounds (26.70
3 kN) applied horizontally in any direction to the barrier system and
4 shall have anchorage or attachment capable of transmitting this
5 load to the structure. For design of the system, the load shall be
6 assumed to act at a minimum height of 1 foot, 6 inches (457 mm)
7 above the floor or ramp surface on an area not to exceed 1 square
8 foot (305 mm²), and is not required to be assumed to act
9 concurrently with any handrail or guard loadings specified in the
10 preceding paragraphs of §1607.7.1. Garages accommodating trucks
11 and buses shall be designed in accordance with an approved
12 method that contains provision for traffic railings. [Emphasis
13 added.]

14 120. The UBC 1997 §311.2.3.5 says:

15 Vehicle barriers. In parking garages where any parking area is
16 located more than f feet (1524 mm) above the adjacent grade,
17 vehicle barriers shall be provided. . . .

18 Vehicle barriers shall have a minimum vertical dimension of 12
19 inches (305 mm) and shall be centered at 18 inches (457 mm)
20 above the parking surface. See Table 16-B for load criterion.

21 See Exhibit D attached hereto and incorporated herein by this reference.

22 121. Not a single vehicle barrier can be found in the River Park Square Parking Garage
23 which complies with the requirements of UBC 1997 §311.2.3.5

24 122. On May 17, 2006, prior to the hearing initiated by Joe Wizner, the attorney for the
25 plaintiff herein sent a letter to Mr. Wizner making it clear that the spandrels in the garage did not
26 in fact comply with §1607.7.3. A copy of the letter is attached and incorporated herein by this
27 reference as Exhibit B.
28

29 123. Mr. Wizner ignored the letter.

30 124. §1607.7.3 Vehicle barriers says “[v]ehicle barrier systems for passenger cars shall
31 be designed to resist a single load of 6,000 pounds (26.70 kN) applied horizontally in any
32
33
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1 direction to the barrier system and shall have anchorage or attachment capable of transmitting
2 this load to the structure. [Emphasis added.]

3
4 125. An RPS spandrel cannot be said to be a "vehicle barrier system" because the
5 spandrels do not have "anchorage or attachment capable of transmitting this load [the single load
6 of 6,000 pounds] to the structure" of the garage.

7
8
9 126. The standard by which the vehicle barrier is tested also makes it clear that the
10 spandrels are not "vehicle barrier systems."

11
12 127. The design of the system requires that the "load shall be assumed to act" at a certain
13 height "above the floor or ramp surface."

14
15 128. Here, there was no "floor or ramp surface" for testing the load or measuring the load
16 because the "floor or ramp surface" of the spandrel – the horizontal part of the spandrel – was not
17 the structure of the garage, it was a part of the spandrel.

18
19 129. Note what the RPS Garage spandrel looks like. It is not a wall. It is something else.
20 It is not a barrier. It may be an extension of the deck of the garage. It is not a wall or vertical
21 barrier attached deck of the garage. It is an "L" shaped decorative panel. It is only that.

22
23 130. The RPS Garage spandrel is merely decoration – a decorative filler.

24
25 131. One can also see the fallacy of the WJE's opinion or conclusion that the spandrel is
26 a code complying Vehicle Barrier under IBC §1607.7.03 by looking at remains of the spandrel
27 which broke causing the death of Jo Ellen Savage.

28
29 132. The remains of a part of the spandrel are still in place and are visible to the eye from
30 the sidewalks and streets below (including immediately below) or from the deck of the garage
31 itself. See Figure 2 above.

1 133. The spandrel broke just above the edge of the garage deck.

2
3 134. Anyone who has used a lever to lift a rock will have the sense to know that the way
4 the spandrel attached to the deck of the garage would prevent a load on the inside side of the
5 upright portion of the spandrel from being “transmitt[ed] . . . to the structure” of the garage.
6
7

8 135. That is to say, the load to the spandrel, activated or caused to be put in motion
9 through the structure of the spandrel, would not end up being transmitted to the structure of the
10 garage.
11

12
13 136. Instead, at the point where the spandrel attached to the deck of the garage, it would
14 be transmitted back to the spandrel causing the spandrel to break or shear at that point of
15 attachment to the deck of the garage.
16

17 137. This is exactly what has happened in the case of the death of Jo Ellen Savage.

18 138. This is probably what happened in past spandrel failures.

19
20 139. In actual fact, if the spandrels are said to be a “vehicle barriers,” then they must
21 comply with the requirements for vehicle barriers as set forth in IBC §1607.7.03. The spandrels
22 in place as built or as designed do not meet the requirements of the code.
23
24

25
26 140. Not only is the River Park Square Parking Garage a public nuisance, it is in clear
27 violation of the Spokane Building Code – and, the code section being violated is one directly and
28 immediately concerned with health and welfare matters which rise to the level of life and death.
29

30 141. There will be another RPS Garage spandrel failure. It is only a matter of time
31 before it happens again. *See* Exhibit C, the report of a death of a young woman pregnant with
32 her second child walking to work at a bank in Lexington, Kentucky, who died on May 16, 2006
33 when a “spandrel” from a parking garage landed on top of her.
34
35
36

1 142. When the next spandrel falls at the River Park Square Parking Garage, another
2 vehicle may well fall from the RPS garage parking deck.
3

4 143. This next time, there may well be more than one death.
5

6 144. This next time, the falling vehicle may have more than one passenger in it and it
7 may fall on several people walking on the sidewalk on Spokane Falls Boulevard or eating lunch
8 or dinner at the Rock City Grill at its outside restaurant area beneath the spandrels.
9
10

11 145. Plaintiff does not have a “plain, speedy and adequate remedy in the ordinary course
12 of law” regarding the assertion that the City must act to enforce the law and protect the health
13 and welfare of her people. RCW 7.16.170.
14

15 146. The court has the power (indeed the duty) to issue a writ of mandamus directed to
16 the city of Spokane. RCW 7.16.160.
17

18 147. Plaintiff seeks the issuance of an Alternative Writ as provided for in RCW
19 7.16.180:
20
21

22 The writ may be either alternative or peremptory. The alternative
23 writ must state generally the allegation against the party to whom it
24 is directed, and command such party, immediately after the receipt
25 of the writ, or at some other specified time, to do the act required
26 to be performed, or to show cause before the court, at a specified
27 time and place, why he has not done so. The peremptory writ must
28 be in some similar form, except the words requiring the party to
29 show cause why he has not done as commanded must be omitted
30 and a return [day] inserted.

31 **Prayers for relief:**

32 148. Time is of the essence – the court should begin the case as soon as possible.
33

34 149. That the court determine whether the River Park Square Parking Garage, as it is
35
36

1 currently constructed and in its current condition, poses public nuisance – a danger to the health
2 and safety of the public using the River Park Square Parking Garage.
3

4 150. That if the court determines the River Park Square Parking Garage is a public
5 nuisance in whole or in part, it cause the issue of such orders necessary to ensure temporary
6 closure of the River Park Square Parking Garage until such time as the dangerous condition
7 making the River Park Square Parking Garage a nuisance may be abated.
8
9

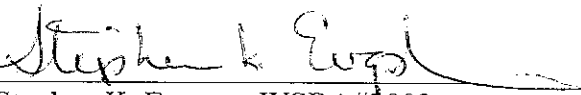
10 151. That the court issue a writ of mandamus to the City of Spokane directing it to
11 enforce its building code and to abate the code violations found at the River Park Square Parking
12 Garage.
13
14

15 152. That the court order such abatement action and writs as necessary.
16

17 153. That the court award fees and costs.
18

19 Dated: May 19, 2006.
20

21 EUGSTER LAW OFFICE PSC

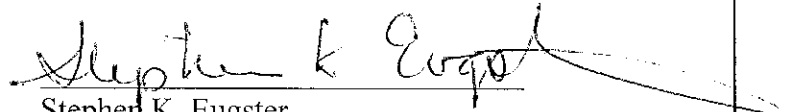
22
23 By 
24 Stephen K. Eugster, WSBA#2003
25 Attorney for Plaintiff
26
27

28 **DECLARATION / VERIFICATION**
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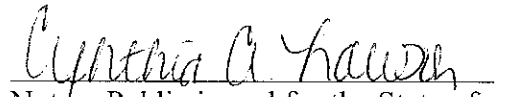
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31 STATE OF WASHINGTON)
32)ss.
33 County of Spokane)

34 Stephen K. Eugster, being first duly sworn on oath deposes and says that he is over the age
35 of eighteen and competent to be a witness in these proceedings, that he is the President of Spokane
36 Research & Defense Fund, the Plaintiff named and described above, and that he has read the
Foregoing Amended Complaint and knows the contents thereof and believes the same to be true and

1 correct and makes this affidavit on the basis of his own personal information, belief and knowledge
2 with the caveat the matters pertaining to the incident in the fall of 1999 were told to me by a person
3 I interviewed on two occasions.

4
5 
6 Stephen K. Eugster

7
8 Subscribed and sworn to before me this 19th day of May, 2006.

9
10 
11 Notary Public in and for the State of
12 Washington residing at Spokane.
13 My Commission Expires: 10-20-09.





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Withampoon, Kelley, Davenport & Toole
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vertical leg and around the curve. The horizontal legs of the barriers are 5 inches thick. The panels are 9 feet 9 inches long. According to a drawing titled *Spandrel Panel* by Central Pre-Mix Prestress Co. dated 8 April 1999, the panels installed in 1999 are reinforced with #6 longitudinal reinforcing steel bars at approximately 12 inches on center (11 bars total in 9 foot 9 inch panel length). Horizontal reinforcement is provided by #4 reinforcing bars spaced at 12 inches on center max. The top edge and toe edge of the panels are reinforced with two #6 horizontal reinforcing bars. In discussions with Mr. Craig Lee, of Coffman Engineers, who designed the vehicle barriers for the 1999 addition, the barriers designed in 1999 were nearly the same as those originally installed as part of the 1974 construction. The only difference, according to Mr. Lee, was the manner in which the barriers were anchored to the deck.

Reportedly, in 1990 a vehicle impacted a barrier on the south side of the building. As a result of that incident, a structural investigation of the barriers was performed by Mr. Richard Atwood, P.E. of Atwood-Hinzman, Inc. in 1993.

In 2003, WJE performed a limited condition survey of the building at the request of Davis, Wright, Tremaine.

Investigation

As part of our evaluation of the existing vehicle barriers, we have visited the garage and reviewed the documentation provided by your office. The documents reviewed included the following:

- Four spandrel panel detail drawings by Central Pre-Mix Prestress Co. dated 8 April 1999
- Structural investigation report by Atwood-Hinzman, Inc. from 1993
- Letter from City dated 3 May 2006
- Complaint to Abate Public Nuisance by Spokane Research & Defense Fund, a Washington non-profit corporation.

During our site visit on 8 May 2006, we visually inspected the vehicle barriers on multiple levels of the building. Detailed measurements were taken of the failed panel on the north side of the 5th floor. It is our understanding that the vertical leg of the panel folded outward as a result of the vehicle impact and was left hanging on the side of the building by the reinforcing steel. The steel bars were later cut and the vertical leg of the panel was removed and is now stored at GeoEngineers, Inc. in Spokane, Washington. We visited GeoEngineers, Inc. and took detailed measurements of the vertical leg of the panel.

Findings

It was found that the failed panel was reinforced with vertical #6 reinforcing steel bars at approximately 12 inches on center across the length of the panel. There were 11 bars total in the 9 foot 9 inch panel. The panel thickness of the vertical legs was 6 inches. The panel thickness of the horizontal leg of the panel adjacent to the failed panel was 5-1/4 inches. We were unable to get a thickness measurement on the horizontal leg of the failed panel due to limited access. A horizontal #4 reinforcing steel bar was observed along the break line of the vertical leg of the panel. There was no evidence of corrosion of the reinforcing steel observed within the panel.

The depth of concrete cover was measured to the top of each of the vertical reinforcing steel bars. It was found that the average distance from the top inside (tension) face of the panels to the reinforcing steel was



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3.28 inches. Accounting for the 3/4 inch diameter of the reinforcing steel, this resulted in the average distance of the center of the reinforcing steel to the outer (compression) face of the 5-1/4 inch thick panel of 1.60 inches. If other panels are only 5 inches thick, as shown in the design drawings, the distance from the compression face of the concrete to the center of the reinforcing would be 1.35 inches.

While at the site, we used a Proceq Profometer rebar locator to measure the depth of the reinforcing steel in the panels immediately adjacent to the failed panel. It was found that in two of the three panels, the vertical reinforcing steel appeared to be located at approximately the neutral axis. We were unable to determine the depth of the reinforcing steel in the third panel.

The 1997 Uniform Building Code (1997 UBC) was the governing model building code in effect at the time that the 1999 addition to the structure was constructed. The 2003 International Building Code (2003 IBC) is the current model building code adopted by the City of Spokane. In both of these codes, the structural requirements for the design of a vehicle barrier are covered in Chapter 16 of the code. The provision in the 2003 IBC reads as follows:

Section 1607.7.3 Vehicle Barriers. Vehicle barrier systems for passenger cars shall be designed to resist a single load of 6,000 pounds (26.70 kN) applied horizontally in any direction to the barrier system and shall have anchorage or attachment capable of transmitting this load to the structure. For design of the system, the load shall be assumed to act at a minimum height of 1 foot, 6 inches (457 mm) above the floor or ramp surface on an area not to exceed 1 square foot (305 mm²), and is not required to be assumed to act concurrently with any handrail or guard loadings specified in the preceding paragraphs of Section 1607.7.1. Garages accommodating trucks and buses shall be designed in accordance with an approved method that contains provision for traffic railings.

When the 1974 portion of the building was built, there did not appear to be provisions in the code that governed the design of vehicle barriers.

Analysis

We have analyzed the vehicle barrier panels to check their conformance with the 2003 IBC requirements. Our analysis includes an assessment of both the 'as-designed' panel and the 'as-built' panel. For the as-built condition, our analysis is reliant upon our measurements taken of the failed panel where we were able to take accurate measurements of the steel locations in the panel.

As Designed. The as-designed panel has the vertical reinforcing steel centered in the precast panels at the neutral axis of the panel. If the steel is placed at the neutral axis, the 'd,' or distance from the centroid of the reinforcing steel to the extreme compression surface of the panel is 2.5 inches. The concrete in the panels (1999 version) was specified to have a 28-day compression strength (F_c) of 5,000 psi.

The code requires the 6,000 pound load be applied at a distance 18 inches above the surface of the deck; however, since there is a 6 inch curb at the toe edge of the panels, we assumed the load would act at 18 inches above the top surface of the horizontal leg of the panels. This resulted in the load being applied at a point 20.5 inches above the neutral axis of the critical section of the panel.



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Assuming the entire panel width (9 feet 9 inches) acts to resist the applied force, the as-designed panel has a *design* capacity of 17,600 pounds. The design capacity is the capacity calculated using the appropriate load and resistance factors for strength design of concrete per the American Concrete Institute (ACI - 318), the governing code for design of structural concrete.

As Built. As described, the longitudinal reinforcing steel within the panel that failed was not placed at the neutral axis. The reinforcing was actually located more toward that compression surface of the panel. In our analysis of the as-built panel, we used an average distance from the center of the reinforcing to the extreme compression surface of the panel of 1.35 inches. We did not utilize the actual panel thickness measured at the adjacent panel of 5.25 inches because there may be instances in the garage where panels are not that thick. In addition, our limited measurements of rebar depth in the panels adjacent to the failed panel indicate that at least some of the panels have better placement of the reinforcing steel and will have capacities in excess of that which we have calculated.

Assuming the entire panel width (9 feet 9 inches) acts to resist the applied force, the as-built panel has a *design* capacity of 8,400 pounds. Again, the design capacity is the capacity calculated using the appropriate load and resistance factors for strength design of concrete per the American Concrete Institute (ACI - 318), the governing code for design of structural concrete.

Conclusions and Discussion

There may be some discussion as to how much of the width of the panels are actually appropriate to use in the capacity analysis of the panels. For instance, if the design load is applied to the panel in a 1 foot square area as required by the code, and the forces are transmitted downward into the panel at approximately 45 degrees, that would result in 4 feet (12 + 18 + 18 inches = 4 feet) of the panel section acting to resist the applied force. However, we believe that this assumption would dramatically underestimate the actual capacity of the panels. In fact, concrete is very good at distributing shear, and since the panels are reinforced with horizontal reinforcement, there should be almost no shear lag in distributing the applied force into the entire panel width. We cannot foresee any benefit to a yield-line theory analysis of the panel, since we can see by the failed panel that the method of failure for the panel was bending at the 5 inch cross section at the base of the panel curve. In addition, no evidence of vertical cracking or other distress was observed in the vertical leg of the panel stored at GeoEngineers. In fact, short of rub marks and some apparent tire marks near the center of the failed panel, there was almost no indication at all in the upper 2-1/2 feet of the panel that it had been impacted. As a result, it appears that the panel was more than able to distribute the applied load across the entire width of the panel so that the entire cross section could act to resist the applied loads.

Our analysis of the as-designed panels found that they have a demand-to-capacity ratio of 0.34. Our analysis of the as-built panel (based on measurements of the failed panel) found that it had a demand-to-capacity ratio of 0.71. The placement of the reinforcing steel away from the neutral axis of the panel resulted in a loss in capacity of 52 percent; however, the as-built panel used in our analysis should still have adequate capacity to resist the design live load of 6,000 pounds applied 18 inches above the top surface of the horizontal leg. As a result, the as-designed and as-built panels appear to meet the requirements of the current 2003 IBC code.



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According to our analysis, the as-built panel would have to be able to mobilize 7 feet of panel width to meet the code required live load of 6,000 pounds at 18 inches. The panel will mobilize 7 feet of panel width if the load is applied at least 3 feet from a panel edge and the load is able to distribute downward into the panel at an angle of 63 degrees from vertical. The angle of 63 degrees appears to be reasonable and we believe that a load applied near the center of the panel would actually mobilize the entire panel width.

The panels were checked for punching shear and were found to have more than adequate capacity for this failure mode.

There is a possibility that a panel impacted near one end would have a triangular failure at the corner of the panel. This type of failure would likely not be catastrophic as it would not allow a car to pass over the panel.

In general, the panels throughout the garage appeared to be in good condition. We did not observe any evidence of deterioration of the connection points of the panels to the concrete decks. There was no evidence of any type of failure related to the connection points in the recent accident.

At selected locations throughout the building, there was evidence of corroding horizontal reinforcing steel in the horizontal leg of the panels near the toe. This condition was evident in the failed panel as well. It is likely that this condition is caused by vehicles transporting de-icing salts into the garage during the winter and dripping the road salts onto the toe edge of the panels while parked. Moderate corrosion of reinforcing steel at this location will have no impact on the capacity of the panels but would be a maintenance and aesthetic concern.

We have assumed a concrete compressive strength of 5,000 psi in all of our analyses and a steel yield stress of 60,000 psi. It is likely that the actual steel yield stress will be in excess of 60,000 psi. It is also possible that the concrete strength may be in excess of the 5,000 psi specified strength; however, to confirm this, we recommend removal of concrete core samples from representative panels in the garage for compressive strength testing.

Summary and Recommendations

The as-designed panels meet the current code requirements for strength, even though the panels constructed in 1974 do not appear to have been governed by a known code requirement at the time of construction. The placement of the reinforcing steel within the failed panel has resulted in that panel having less capacity than was intended in the original design; however, based on our analysis, the panel still appears to meet the current code requirements for strength. For the purposes of this evaluation, we have taken the construction of the failed panel to be representative of the remaining panels within the building. Based on the rebar detector measurements of the panels adjacent to the failed panel, it appears that the placement of the reinforcing steel is better in some panels than the failed panel.

Although the panels appear to meet the strength requirements of the governing codes, it appears that vehicles are able to impart more than 6,000 pounds of force on the barriers.

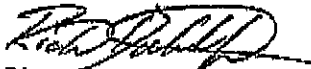
WJE | ENGINEERS
ARCHITECTS
MATERIALS SCIENTISTS

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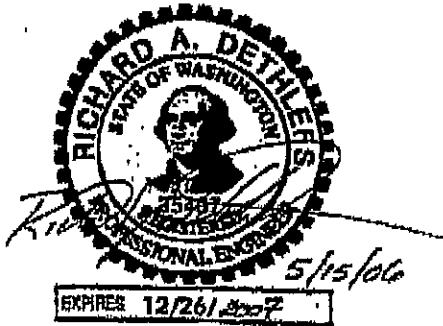
It is our opinion that the vehicle barriers in the River Park Square Parking Garage are in general conformance with the current code requirements for vehicle barriers. The panels do not appear to be suffering from lack of maintenance or significant deterioration or corrosion. The vehicle barriers likely provide a similar level of safety as many of the other parking structures in and around Spokane and throughout the state of Washington.

Very truly yours,

WISS, JANNEY, ELSNER ASSOCIATES, INC.


Richard A. Dethlefs, P.E., S.E.
Project Manager

P:\2006\2097 River Park Square Parking Garage (RAD)\RPS report.doc



As this letter will explain, there is a glaring fallacy in the report.

The conclusion reached by Richard A Dethlefs, P.E., S.E., Project Engineer for WJE is as follows:

. . . it is our opinion that the vertical barriers in the River Park Square parking garage are in general conformance with the current code requirements for vehicle barriers.

This opinion is wrong. It is wrong because the spandrels are not “vehicle barriers” as defined by IBC §1607.7.3.

The IBC defines “vehicle barriers” as follows:

§1607.7.3 Vehicle barriers. Vehicle barrier systems for passenger cars shall be designed to resist a single load of 6,000 pounds (26.70 kN) applied horizontally in any direction to the barrier system and shall have anchorage or attachment capable of transmitting this load to the structure. For design of the system, the load shall be assumed to act at a minimum height of 1 foot, 6 inches (457 mm) above the floor or ramp surface on an area not to exceed 1 square foot (305 mm²), and is not required to be assumed to act concurrently with any handrail or guard loadings specified in the preceding paragraphs of §1607.7.1. Garages accommodating trucks and buses shall be designed in accordance with an approved method that contains provision for traffic railings. [Emphasis added.]

The spandrel that failed, the other spandrels which have failed, and the remaining spandrels attached to the garage parking decks are not “vertical barrier[s]” as contemplated or defined by IBC §1607.7.03. **(Or if they are, they fail to comply with IBC §1607.7.03 – see discussion below.)**

This section says “[v]ehicle barrier systems for passenger cars shall be designed to resist a single load of 6,000 pounds (26.70 kN) applied horizontally in any direction to the barrier system and shall have anchorage or attachment capable of transmitting this load to the structure.”

An RPS spandrel cannot be said to be a “vehicle barrier system” because the spandrels do not have “anchorage or attachment capable of transmitting this load [the single load of 6,000 pounds] to the structure” of the garage.

The standard by which the vehicle barrier is tested also makes it clear that the spandrels are not “vehicle barrier systems.” The design of the system requires that the “load shall be assumed to act” at a certain height “above the floor or ramp surface.” Here, there was no “floor or ramp surface” for the testing the load or measuring the load because the “floor or ramp

Joe Wizner
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surface” of the spandrel – the horizontal part of the spandrel – was not the structure of the garage, it was a part of the spandrel.

Note what the RPS Garage spandrel looks like. It is not a wall. It is something else. It is not a barrier. It may be an extension of the deck of the garage. It is not a wall or vertical barrier attached deck of the garage. It is an “L” shaped decorative panel. It is only that.

One can also see the fallacy of the WJE’s opinion or conclusion that the spandrel is a code complying Vehicle Barrier under IBC §1607.7.03 by looking at remains of the spandrel which broke causing the death of Jo Ellen Savage. The remains of a part of the spandrel are still in place and are visible to the eye from the sidewalks and streets below (including immediately below) or from the deck of the garage itself.

The spandrel broke just above the edge of the garage deck. Anyone who has used a lever to lift a rock will have the sense to know that the way the spandrel attached to the deck of the garage would prevent load on the inside side of the upright portion of the spandrel from being “transmitt[ed] . . . to the structure” of the garage.

That is to say, the load to the spandrel, activated or caused to be put in motion through the structure of the spandrel, would not end up being transmitted to the structure of the garage. Instead, at the point where the spandrel attached to the deck of the garage, it would be transmitted back to the spandrel causing the spandrel to break or shear at that point of attachment to the deck of the garage.

This is exactly what has happened in the case of the death of Jo Ellen Savage.

I believe that is what has happened with regard to past spandrel failures.

In actual fact, if the spandrels are said to be a “vehicle barriers”, then they must comply with the requirements for vehicle barriers as set forth in IBC §1607.7.03. The spandrels in place as built or as designed do not meet the requirements of the code.

The River Park Square Parking Garage is a public nuisance.

There will be another spandrel failure. It is only a matter of time before it happens again.

When the next spandrel fails another vehicle may well fall from the RPS garage parking deck. This next time, there may well be more than one death. This next time the falling vehicle may have more than one passenger in it, and it may fall on several people walking on the sidewalk on Spokane Falls Blvd. or eating lunch or dinner at the Rock City Grill at its outside restaurant area beneath the spandrels.

I sincerely hope you and the City will not be deceived by the WJE report. My view is that it is your job is to protect the health and welfare of the citizens of the City of Spokane and of the people who come to Spokane to participate in our community. It is my view that your job is not to find a rationalization for claiming that what is obviously a nuisance is not a nuisance and

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that what is obviously a violation of the building code is instead compliance with the code.²

Very truly yours,

EUGSTER LAW OFFICE PSC

/s/ Stephen K. Eugster

Stephen K. Eugster

SKE/ske

cc:

Dennis Hession, Mayor, City of Spokane
City of Spokane Council Members
William D. Symmes, Attorney for RPS Parking Garage
Milt Rowland, Assistant City Attorney

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² For a little inspiration regarding the existential position you are in you might want to read Henrik Ibsen's play, AN ENEMY OF THE PEOPLE (1882).



Posted on Wed, May. 17, 2006

Concrete crushes pregnant woman

TRUCK KNOCKS SLAB OFF DOWNTOWN GARAGE

By Todd Van Campen, Jim Jordan And Jillian Ogawa
HERALD-LEADER STAFF WRITERS

A pickup truck knocked a concrete panel from the second floor of a parking garage in downtown Lexington yesterday morning, killing a Chase Bank employee who was eight months pregnant.

Stephanie Hufnagel, 22, was expecting her second daughter, to be named Sydney, with her husband, Brian Hufnagel, 22, also a Chase employee.

The couple dated at Bryan Station High School and married last October, family and friends said yesterday. Their daughter, Raigann, is 18 months old.

Harold Hufnagel, Brian's father, said Stephanie went to work early yesterday to build up hours before maternity leave.

"It was such a terrible thing to happen to a good person," Harold said.

About 7:30 a.m., witnesses said, a white Ford F-150 pickup truck struck a 12-foot-by-8-foot panel, part of an exterior wall of the Chase Bank garage at East Short Street and Esplanade. The 6-inch-thick panel, weighing an estimated 5,000 to 6,000 pounds, fell onto a walkway between the parking garage and the Chase building. It crushed Hufnagel, who was walking below.

Police identified the driver as Devona Jones, 29, of Nicholasville. The truck was estimated to have been going 15 mph when it hit the barrier.

Fayette County Coroner Gary Ginn described Jones as devastated.

The truck's hood and two front wheels were hanging out of the parking garage. Emergency workers chained it to pillars as firefighters removed Hufnagel's body. Authorities are investigating why the truck hit the wall, and engineers will evaluate the building.

Michael Martin, a project foreman for Schnell Contractors in Louisville, said Schnell had recently repaired floor joints in the Chase garage and was called in yesterday to seal the hole left by the missing concrete panel.

Martin said each pre-cast panel is held in place by eight metal anchors -- four across the bottom of the panel and two on each end -- that are bolted into the garage's concrete floor and vertical columns.

"It would have to take a hard lick to knock them off," he said. "These pre-cast panels are made to get hit by a car, but not with force. ... The pre-cast is the barrier that keeps you from going over the side (of the garage)."

Overall, he said, "you can't get any sturdier than what this garage is."

Despite the structure's age of about 34 years, Martin said there has been no deterioration of the concrete except normal wear from use. "This is in good shape," he said.

TIC Properties of Greenville, S.C., owns the parking garage and the adjacent building that Chase occupies.

Construction of both structures began in 1972. Central Parking operates the garage.

"Obviously there has been a horrible accident," said Josh Workman, TIC's chief operating officer. "Our sympathies go out

EXHIBIT

to the families and all the parties involved. We are currently assisting the authorities any way we can."

Workman wouldn't comment on the garage's maintenance.

Lexington Building Inspection director Dewey Crowe says that when a new garage is built, the developer must submit plans to the city to get a building permit.

There is one inspection as part of the permit process before a building gets final approval. After that, the city doesn't inspect a garage again unless its owner does additional work.

There is no requirement for regular government inspections once the garage is finished.

Crowe said the code enforcement department would inspect the garage if there is a complaint about its condition.

Roger Creace, a code enforcement supervisor, said that as far as he knows, the department has never received complaints about the Chase garage.

Glenn Leveridge, president of Chase in Lexington, extended employees' "deepest sympathies" to Hufnagel's family.

"Our prayers go out to them," he said.

Brian and Stephanie Hufnagel moved into their first home in Lexington near the end of last year, Harold Hufnagel said. His son loved Stephanie tremendously.

"She was the best thing to happen to Brian," Harold said. "He loved her."

Stephanie's mother, Cindy Cunningham, 43, of Lexington, said Stephanie loved being a mother and often played with and read to her daughter.

"If I needed Stephanie, all I need to do is call. I didn't need to worry about what she was doing, she would stop and come," Cunningham said.

"She was an angel on earth and now an angel in heaven," Cunningham said.

Stephanie's friends said she often made home-cooked country meals.

"She took care of us," said Casey Hamilton. "We always called her 'mama.'"

Funeral arrangements will be made at Kerr Brothers on Harrodsburg Road. Family members said Stephanie will be buried in Owensboro, where her family lived until 1996.

Stephanie also is survived by her sister, Miranda Cunningham, 24, of Lexington, and her father Mark Cunningham, 45, of Lexington.

Leveridge said Chase is establishing a scholarship fund for Raigann Hufnagel. Donations can be made at any Chase branch.

Herald-Leader staff writer Jim Warren contributed to this report.

Division 3. Division 3 Occupancies shall include repair garages where work is limited to exchange of parts and maintenance requiring no open flame or welding, motor vehicle fuel-dispensing stations, and parking garages not classed as Group S, Division 4 open parking garages or Group U private garages.

For the use of flammable and combustible liquids, see Section 307 and the Fire Code.

Division 4. Open parking garages per Section 311.9.

Division 5. Aircraft hangars where work is limited to exchange of parts and maintenance requiring no open flame or welding and helistops.

For occupancy separations, see Table 3-B.

311.2 Construction, Height and Allowable Area.

311.2.1 General. Buildings or parts of buildings classed in Group S Occupancy because of the use or character of the occupancy shall be limited to the types of construction set forth in Table 5-B and shall not exceed, in area or height, the limits specified in Sections 504, 505 and 506.

311.2.2 Special provisions.

311.2.2.1 Group S, Division 3 with Group A, Division 3; Group B; Group M or R, Division 1 Occupancy above. Other provisions of this code notwithstanding, a basement or first story of a building may be considered as a separate and distinct building for the purpose of area limitations, limitation of number of stories and type of construction, when all of the following conditions are met:

1. The basement or first story is of Type I construction and is separated from the building above with a three-hour occupancy separation. See Section 302.3.

2. The building above the three-hour occupancy separation contains only Group A, Division 3; Group B; or Group M or R, Division 1 Occupancies.

3. The building below the three-hour occupancy separation is a Group S, Division 3 Occupancy used exclusively for the parking and storage of private or pleasure-type motor vehicles.

EXCEPTIONS: 1. Entry lobbies, mechanical rooms and similar uses incidental to the operation of the building.

2. Group A, Division 3 and Group B office, drinking and dining establishments and Group M retail occupancies in addition to those uses incidental to the operation of the building (including storage areas), provided that the entire structure below the three-hour occupancy separation is protected throughout by an automatic sprinkler system.

4. The maximum building height in feet shall not exceed the limits set forth in Table 5-B for the least type of construction involved.

311.2.2.2 Group S, Division 3 Occupancy with Group S, Division 4 Occupancy above. Other provisions of this code notwithstanding, a Group S, Division 3 Occupancy, located in the basement or first story below a Group S, Division 4 Occupancy, as defined in Section 311.9, may be classified as a separate and distinct building for the purpose of determining the type of construction when all of the following conditions are met:

1. The allowable area of the structure shall be such that the sum of the ratios of the actual area divided by the allowable area for each separate occupancy shall not exceed one.

2. The Group S, Division 3 Occupancy is of Type I or II construction and is at least equal to the fire resistance of the Group S, Division 4 Occupancy.

3. The height and the number of the tiers above the basement shall be limited as specified in Table 3-H or Section 311.9.5.

4. The floor-ceiling assembly separating the Group S, Division 3 and Group S, Division 4 Occupancy shall be protected as required for the floor-ceiling assembly of the Group S, Division 3 Occupancy. Openings between the Group S, Division 3 and Group S, Division 4 Occupancy, except exit openings, need not be protected.

5. The Group S, Division 3 Occupancy is used exclusively for the parking or storage of private or pleasure-type motor vehicles, but may contain (i) mechanical equipment rooms incidental to the operation of the building and (ii) an office, and waiting and toilet rooms having a total area of not more than 1,000 square feet (93 m²).

311.2.3 Specific use provisions.

311.2.3.1 Group S, Divisions 3 and 5 Occupancies. In areas where motor vehicles, boats or aircraft are stored, and in motor vehicle fuel-dispensing stations and repair garages, floor surfaces shall be of noncombustible, nonabsorbent materials. Floors shall drain to an approved oil separator or trap discharging to sewers in accordance with the Plumbing Code.

EXCEPTION: Floors may be surfaced or waterproofed with asphaltic paving materials in areas where motor vehicles or airplanes are stored or operated.

311.2.3.2 Marine or motor vehicle fuel-dispensing stations. Marine or motor vehicle fuel dispensing stations, including canopies and supports over fuel dispensers, shall be of noncombustible, fire-retardant-treated wood or of one-hour fire-resistive construction.

EXCEPTIONS: 1. Roofs of one-story fuel-dispensing stations may be of heavy-timber construction.

2. Canopies conforming to Section 2603.13 may be erected over pumps.

Canopies under which fuels are dispensed shall have a clear, unobstructed height of not less than 13 feet 6 inches (4114 mm) to the lowest projecting element in the vehicle drive-through area.

A one-hour occupancy separation need not be provided between fuel dispensers covered with a canopy that is open on three or more sides, and a Group M Occupancy retail store having an area of less than 2,500 square feet (232 m²) when the following conditions exist:

1. The Group M Occupancy is provided with two exits or exit-access doorways separated as required by Section 1004.2.4 and not located in the same exterior wall.

2. Fuel-dispenser islands are not located within 20 feet (6096 mm) of the Group M Occupancy retail store.

311.2.3.3 Parking garage headroom. Parking garages shall have an unobstructed headroom clearance of not less than 7 feet (2134 mm) above the finish floor to any ceiling, beam, pipe or similar obstruction, except for wall-mounted shelves, storage surfaces, racks or cabinets.

311.2.3.4 Group S, Division 2 Occupancy roof framing. In Division 2 Occupancies, the roof-framing system may be of unprotected construction.

311.2.3.5 Vehicle barriers. In parking garages where any parking area is located more than 5 feet (1524 mm) above the adjacent grade, vehicle barriers shall be provided.

EXCEPTION: Parking garages of Group U, Division 1 Occupancies.

Vehicle barriers shall have a minimum vertical dimension of 12 inches (305 mm) and shall be centered at 18 inches (457 mm) above the parking surface. See Table 16-B for load criterion.

Exhibit

D.

TABLE 16-B—SPECIAL LOADS¹

USE		VERTICAL LOAD	LATERAL LOAD
Category	Description	(pounds per square foot unless otherwise noted)	
		× 0.0479 for kN/m ²	
1. Construction, public access at site (live load)	Walkway, see Section 3303.6	150	
	Canopy, see Section 3303.7	150	
2. Grandstands, reviewing stands, bleachers, and folding and telescoping seating (live load)	Seats and footboards	120 ²	See Footnote 3
3. Stage accessories (live load)	Catwalks	40	
	Followspot, projection and control rooms	50	
4. Ceiling framing (live load)	Over stages	20	
	All uses except over stages	10 ⁴	
5. Partitions and interior walls, see Sec. 1611.5 (live load)			5
6. Elevators and dumbwaiters (dead and live loads)		2 × total loads ⁵	
7. Mechanical and electrical equipment (dead load)		Total loads	
8. Cranes (dead and live loads)	Total load including impact increase	1.25 × total load ⁶	0.10 × total load ⁷
9. Balcony railings and guardrails	Exit facilities serving an occupant load greater than 50		50 ⁸
	Other than exit facilities		20 ⁸
	Components		25 ⁹
10. Vehicle barriers	See Section 311.2.3.5		6,000 ¹⁰
11. Handrails		See Footnote 11	See Footnote 11
12. Storage racks	Over 8 feet (2438 mm) high	Total loads ¹²	See Table 16-O
13. Fire sprinkler structural support		250 pounds (1112 N) plus weight of water-filled pipe ¹³	See Table 16-O
14. Explosion exposure	Hazardous occupancies, see Section 307.10		

¹The tabulated loads are minimum loads. Where other vertical loads required by this code or required by the design would cause greater stresses, they shall be used.

²Pounds per lineal foot (× 14.6 for N/m).

³Lateral sway bracing loads of 24 pounds per foot (350 N/m) parallel and 10 pounds per foot (145.9 N/m) perpendicular to seat and footboards.

⁴Does not apply to ceilings that have sufficient total access from below, such that access is not required within the space above the ceiling. Does not apply to ceilings if the attic areas above the ceiling are not provided with access. This live load need not be considered as acting simultaneously with other live loads imposed upon the ceiling framing or its supporting structure.

⁵Where Appendix Chapter 30 has been adopted, see reference standard cited therein for additional design requirements.

⁶The impact factors included are for cranes with steel wheels riding on steel rails. They may be modified if substantiating technical data acceptable to the building official is submitted. Live loads on crane support girders and their connections shall be taken as the maximum crane wheel loads. For pendant-operated traveling crane support girders and their connections, the impact factors shall be 1.10.

⁷This applies in the direction parallel to the runway rails (longitudinal). The factor for forces perpendicular to the rail is 0.20 × the transverse traveling loads (trolley, cab, hooks and lifted loads). Forces shall be applied at top of rail and may be distributed among rails of multiple rail cranes and shall be distributed with due regard for lateral stiffness of the structures supporting these rails.

⁸A load per lineal foot (× 14.6 for N/m) to be applied horizontally at right angles to the top rail.

⁹Intermediate rails, panel fillers and their connections shall be capable of withstanding a load of 25 pounds per square foot (1.2 kN/m²) applied horizontally at right angles over the entire tributary area, including openings and spaces between rails. Reactions due to this loading need not be combined with those of Footnote 8.

¹⁰A horizontal load in pounds (N) applied at right angles to the vehicle barrier at a height of 18 inches (457 mm) above the parking surface. The force may be distributed over a 1-foot-square (304.8-millimeter-square) area.

¹¹The mounting of handrails shall be such that the completed handrail and supporting structure are capable of withstanding a load of at least 200 pounds (890 N) applied in any direction at any point on the rail. These loads shall not be assumed to act cumulatively with Item 9.

¹²Vertical members of storage racks shall be protected from impact forces of operating equipment, or racks shall be designed so that failure of one vertical member will not cause collapse of more than the bay or bays directly supported by that member.

¹³The 250-pound (1.11 kN) load is to be applied to any single fire sprinkler support point but not simultaneously to all support joints.