

Concrete Coalition Phase II: Concrete Building Performance Record

Instructions: This form is for use in collecting data for phase two of the Concrete Coalition project: Developing a Global Database of Concrete Buildings Damaged in Earthquakes. For more information about how to use this form, see the sample form or view the demo at: <http://concretecoalition.org>.

Record ID:

Building Name:

Prepared By:

Section 1: Basic Building Information



2-story classroom building prior to January 12, 2010 earthquake.

Country:		
State/Province:		
City:		
Latitude:		
Longitude:		
Street Address:		
Occupancy:		
Height:		Ft, m
Number of Stories:		
Number of Stories below ground:		
Size:		gsf, sqm
Year Built:		
Original Code:		
Modification:		
Year Modified:		
Code of Modification:		

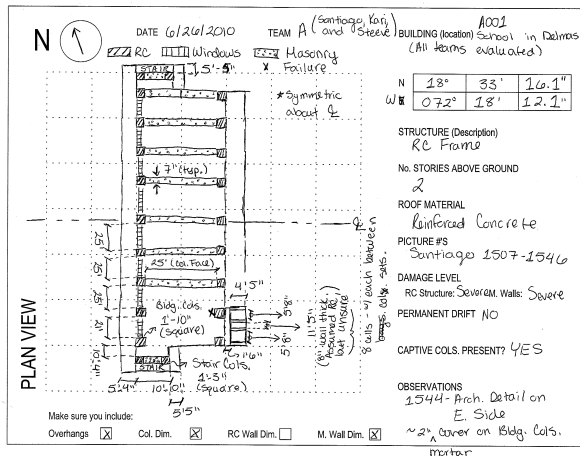
Concrete Coalition Phase II: Concrete Building Performance Record

Record ID:	Building Name:	Prepared By:
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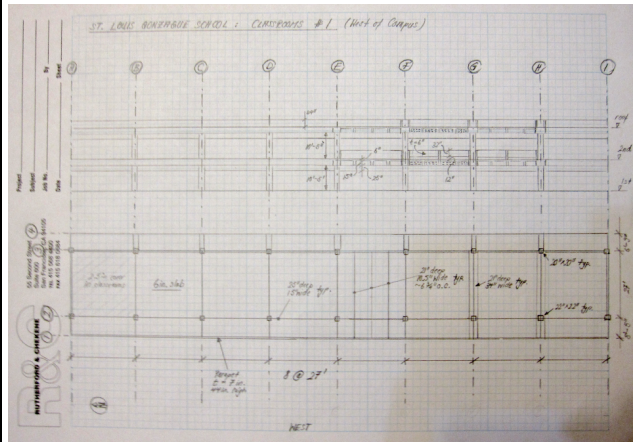
Section 1: Basic Building Information-(Continued)

Lateral Load System:	
Other Lateral Load System:	
Vertical Load System:	
Other Vertical Load System:	
Foundation:	
Building Description:	

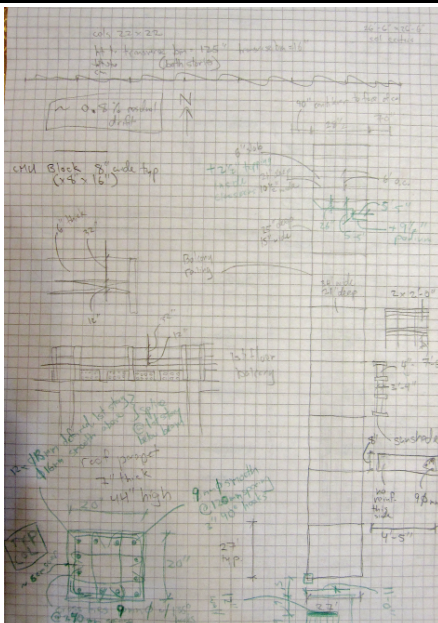
Paste in building plans, engineering drawings or sketches



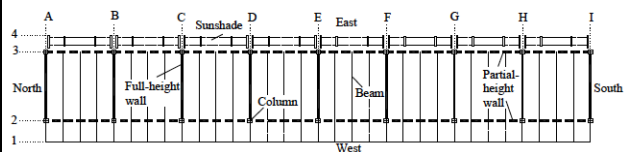
Sketch of building plan. (NEEShub, 2010)



Sketch of building plan and elevation.
(Schellenberg, 2010)



Supplemental building information as observed in field. (Telleen, 2010)



Plan view schematic. (Zhang et al., 2011)

Concrete Coalition Phase II: Concrete Building Performance Record

Record ID:

Building Name:

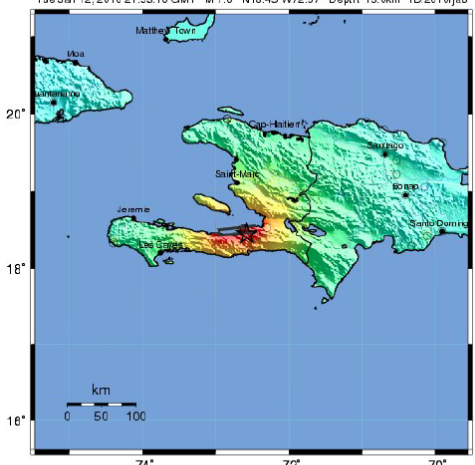
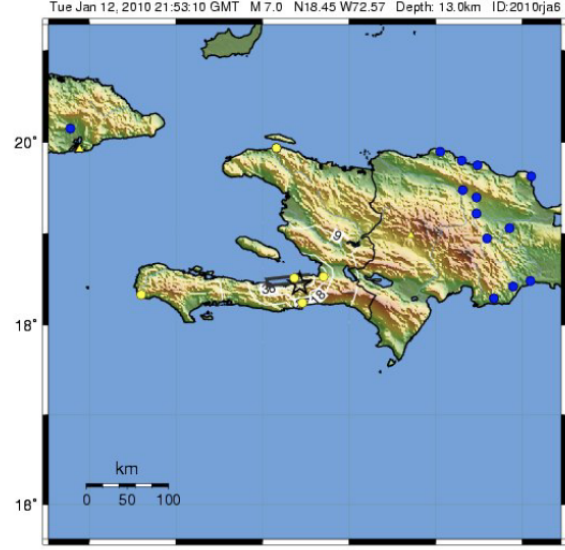
Prepared By:

Section 2: Earthquake Information

Earthquake Date:			
Moment Magnitude:			
Epicentral Distance (km):			
Local Intensity:		Intensity Scale:	
Site Description:			
PGA (max horizontal):			
PGA (vertical):			
SaT:			
Ground Motion Recording Stations:			
Distance to Station (km):			
Station Latitude:			
Station Longitude:			
Ground Motion Summary:			

Additional Ground Motion Information:

Paste in earthquake maps, spectra, or figures involving the ground motion at the building site

<div><p>USGS ShakeMap : HAITI REGION Tue Jan 12, 2010 21:53:10 GMT M 7.0 N18.45 W72.57 Depth 13.0km ID:2010rja6</p><p>Map Version 10 Processed Thu Mar 4, 2010 04:10:14 PM MST - NOT REVIEWED BY HUMAN</p><table><tr><td>PERCEIVED SHAKING</td><td>Not felt</td><td>Weak</td><td>Light</td><td>Moderate</td><td>Strong</td><td>Very strong</td><td>Severe</td><td>Violent</td><td>Extreme</td></tr><tr><td>POTENTIAL DAMAGE</td><td>none</td><td>none</td><td>none</td><td>Very light</td><td>Light</td><td>Moderate</td><td>Moderate/heavy</td><td>Heavy</td><td>Very Heavy</td></tr><tr><td>PEAK ACC (mg)</td><td><.17</td><td>.17-1.4</td><td>1.4-3.9</td><td>3.9-9.2</td><td>9.2-16</td><td>16-34</td><td>34-65</td><td>65-124</td><td>>124</td></tr><tr><td>PEAK VEL (cm/s)</td><td><.01</td><td>0.1-1.1</td><td>1.1-3.4</td><td>3.4-8.1</td><td>8.1-16</td><td>16-31</td><td>31-60</td><td>60-116</td><td>>116</td></tr><tr><td>INSTRUMENTAL INTENSITY</td><td>I</td><td>II-III</td><td>IV</td><td>V</td><td>VI</td><td>VII</td><td>VIII</td><td>IX</td><td>X</td></tr></table></div>	PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme	POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Moderate/heavy	Heavy	Very Heavy	PEAK ACC (mg)	<.17	.17-1.4	1.4-3.9	3.9-9.2	9.2-16	16-34	34-65	65-124	>124	PEAK VEL (cm/s)	<.01	0.1-1.1	1.1-3.4	3.4-8.1	8.1-16	16-31	31-60	60-116	>116	INSTRUMENTAL INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X	<div><p>USGS Peak Accel. Map (in %g) : HAITI REGION Tue Jan 12, 2010 21:53:10 GMT M 7.0 N18.45 W72.57 Depth 13.0km ID:2010rja6</p><p>Map Version 10 Processed Thu Mar 4, 2010 04:10:14 PM MST - NOT REVIEWED BY HUMAN</p></div>
PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme																																										
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INSTRUMENTAL INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X																																										
Shaking intensity of Jan. 12, 2010 Haiti earthquake. (USGS, 2010a)	Estimation of peak ground acceleration (in %g). (USGS, 2010b)																																																		
<div>Insert image here</div>	<div>Insert image here</div>																																																		
Type image caption here:	Type image caption here:																																																		

Concrete Coalition Phase II: Concrete Building Performance Record

Record ID:	Building Name:	Prepared By:
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Section 3: Damage Information

Performance Summary:	
Damage State Description:	
Summary of Causes of Damage:	

Concrete Coalition Phase II: Concrete Building Performance Record

Record ID:

Building Name:

Prepared By:

Section 4: Observed Design and Construction Characteristics-Construction Quality

	Notes	Contribution to Observed Damage				
		<u>Unlikely</u>	<u>Possible</u>	<u>Likely</u>	<u>Unknown</u>	<u>N/A</u>
Materials						
Concrete						
Reinforcing steel						
Execution						
Conveyance/ placement of concrete						
Rebar						
Field variance with design documents						
Other Factors						
Please Specify:						

Concrete Coalition Phase II: Concrete Building Performance Record

Record ID:

Building Name:

Prepared By:

Section 4: Observed Design and Construction Characteristics-Configuration

		Contribution to Observed Damage				
		<u>Unlikely</u>	<u>Possible</u>	<u>Likely</u>	<u>Unknown</u>	<u>N/A</u>
Plan Irregularities						
Torsion						
Perimeter boundary						
Diaphragm						
Out-of-plane offsets in lateral resisting system						
Non-orthogonal systems						

Concrete Coalition Phase II: Concrete Building Performance Record

Record ID:

Building Name:

Prepared By:

Section 4: Observed Design and Construction Characteristics-Configuration-(Continued)

	Notes	Contribution to Observed Damage				
		<u>Unlikely</u>	<u>Possible</u>	<u>Likely</u>	<u>Unknown</u>	<u>N/A</u>
Vertical Irregularities						
Soft Story						
Weak story						
Mass distribution						
Geometric variability of lateral resisting system						
In-plane discontinuity of lateral resisting system						
Setbacks						
Change in stiffness						
Other Factors						
Please Specify:						

Concrete Coalition Phase II: Concrete Building Performance Record

Record ID:

Building Name:

Prepared By:

Section 4: Observed Design and Construction Characteristics-Lateral Load Resisting System-General

	Notes	Contribution to Observed Damage				
		<u>Unlikely</u>	<u>Possible</u>	<u>Likely</u>	<u>Unknown</u>	<u>N/A</u>
Strength						
Overall lack of strength						
Stiffness						
Extreme Flexibility						
Load Path						
Collectors/Struts						
Anchorage of nonstructural elements						
Out-of-plane capacity of walls						
Diaphragm chords						
Diaphragm openings						
Other Factors						
Please Specify:						

Concrete Coalition Phase II: Concrete Building Performance Record

Record ID:

Building Name:

Prepared By:

Section 4: Observed Design and Construction Characteristics-Lateral Load Resisting System-Frames

	Notes	Contribution to Observed Damage				
		<u>Unlikely</u>	<u>Possible</u>	<u>Likely</u>	<u>Unknown</u>	<u>N/A</u>
Columns						
Shear strength						
Flexural strength						
Axial load ratio ($P/A_c/f_c'$)						
“Vertical” load columns drift capacity						
Interference of frame action by infill						
Beams						
Strength relative to columns						
Shear controlled behavior						
Continuity of longitudinal reinforcing						
Loss of vertical capacity						

Concrete Coalition Phase II: Concrete Building Performance Record

Record ID:

Building Name:

Prepared By:

Section 4: Observed Design and Construction Characteristics-Lateral Load Resisting System-Frames-Continued

Notes	Contribution to Observed Damage				
	<u>Unlikely</u>	<u>Possible</u>	<u>Likely</u>	<u>Unknown</u>	<u>N/A</u>
Beams –(continued)					
Interference of frame action by infill					
Joints					
Interior					
Exterior					
Corner					
Other Factors					
Please Specify:					

Concrete Coalition Phase II: Concrete Building Performance Record

Record ID:

Building Name:

Prepared By:

Section 4: Observed Design and Construction Characteristics - Lateral Load Resisting System-Shear Walls

	Notes	Contribution to Observed Damage				
		<u>Unlikely</u>	<u>Possible</u>	<u>Likely</u>	<u>Unknown</u>	<u>N/A</u>
Shear						
Diagonal tension/compression						
Sliding shear						
Flexure/shear						
Flexure						
Compression zone buckling capacity						
Boundary reinforcing fracture/buckling						
Discontinuity of wall						
Boundary Reinforcing at openings						
Other Factors						
Please Specify:						

Concrete Coalition Phase II: Concrete Building Performance Record

Record ID:

Building Name:

Prepared By:

Section 4: Observed Design and Construction Characteristics-Lateral Load Resisting System-Infills

		Contribution to Observed Damage				
Notes		<u>Unlikely</u>	<u>Possible</u>	<u>Likely</u>	<u>Unknown</u>	<u>N/A</u>
Unreinforced						
Interference with frame action						
Out-of-plane						
Attachment to framing						
Other Factors						
Please Specify:						

Concrete Coalition Phase II: Concrete Building Performance Record

Record ID:

Building Name:





Prepared By:

Section 4: Observed Design and Construction Characteristics-Lateral Load Resisting System-Other

	Notes	Contribution to Observed Damage				
		<u>Unlikely</u>	<u>Possible</u>	<u>Likely</u>	<u>Unknown</u>	<u>N/A</u>
Foundations						
Liquefaction						
Pile/pier tension capacity						
Spread footing capacity						
Other:						
Please Specify:						
Miscellaneous						
Pounding						
Surface Rupture						
Other:						
Please Specify:						

Illustrations of damage:

Paste in drawings, sketches or photos of building damage

	
<p>Shear damage in first-story column due to captive column condition. (NEEShub, 2010)</p>	<p>Close-up of shear damage in first-story column. (NEEShub, 2010)</p>
	
<p>Extensive spalling of first-story column. (NEEShub, 2010)</p>	<p>Severe damage to nonstructural URM walls. (NEEShub, 2010)</p>

Concrete Coalition Phase II: Concrete Building Performance Record

Record ID:

Building Name:

Prepared By:

Section 4: Repair and Retrofit Information

Type of retrofit or repair:	
Other:	
Performance Level:	
Hazard Level:	
Code:	
Other:	
Lateral Analysis:	
Other:	
Design Strategy:	
Retrofit Summary:	

Illustrations of Repair or Retrofit:

Paste in drawings, sketches or photos of building repair or retrofit

<p>Insert image here</p>	<p>Insert image here</p>
<p>Type image caption here:</p>	<p>Type image caption here:</p>
<p>Insert image here</p>	<p>Insert image here</p>
<p>Type image caption here:</p>	<p>Type image caption here:</p>

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Record ID:

Building Name:

Prepared By:

Additional Notes:	
Section 1	
Section 2	
Section 3	
Section 4	

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Record ID:

Building Name:

Prepared By:

Appendix 1: Supplemental Basic Information

File Location	
File Caption	
File Location	
File Caption	
File Location	
File Caption	
File Location	
File Caption	
File Location	
File Caption	
File Location	
File Caption	
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File Location	
File Caption	
File Location	
File Caption	

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Record ID:

Building Name:

Prepared By:

Appendix 2: Additional Ground Motion Location

File Location	
File Caption	
File Location	
File Caption	
File Location	
File Caption	
File Location	
File Caption	
File Location	
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File Location	
File Caption	

Concrete Coalition Phase II: Concrete Building Performance Record

Record ID:

Building Name:

Prepared By:

Appendix 3: Illustrations of Damage

File Location	
File Caption	
File Location	
File Caption	
File Location	
File Caption	
File Location	
File Caption	
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File Caption	
File Location	
File Caption	

Concrete Coalition Phase II: Concrete Building Performance Record

Record ID:

Building Name:

Prepared By:

Appendix 4: Illustrations of Repair/Retrofit

File Location	
File Caption	
File Location	
File Caption	
File Location	
File Caption	
File Location	
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File Caption	

Concrete Coalition Phase II: Concrete Building Performance Record

Record ID:

Building Name:

Prepared By:

Appendix 5: References

Citation	
Link to Purchase	
File Location	
Citation	
Link to Purchase	
File Location	
Citation	
Link to Purchase	
File Location	
Citation	
Link to Purchase	
File Location	
Citation	
Link to Purchase	
File Location	

Concrete Coalition Phase II: Concrete Building Performance Record

Record ID:

Building Name:

Prepared By:

Appendix 5: References-(Continued)

Citation	
Link to Purchase	
File Location	
Citation	
Link to Purchase	
File Location	
Citation	
Link to Purchase	
File Location	
Citation	
Link to Purchase	
File Location	
Citation	
Link to Purchase	
File Location	