PCI Precast/Prestressed Concrete Institute

Precast/Prestressed Market Share Analysis 2008

Prepared for the PCI Marketing Committee

by the Metrics/Research Subcommittee

Ken Krause, BASF, Chair

Mission & Tactics

- **Tactics: collect, review, and summarize market effectiveness information from various outside references. The references included:**

  McGraw-Hill Construction Market Forecasting Service

  Freedonia Group Inc. World Cement & Concrete Additives Study

  Hochberg & Company Concrete Admixture Chemicals

  Portland Cement Association

  Precast/Prestressed Concrete Institute

  Bureau of Labor Statistics

  Engineering News Record

  FMI's Construction Outlook 2008

Output of Subcommittee Executive Summary

- I General Economic Outlook
- II Construction Market Outlook
- III Precast/Prestressed Market Concerns
- IV Cement Consumption by Industry Sector History & Projection
- V Concrete Production by Industry Sector History & Projection
- VI Precast/Prestressed Market Projection by Segment
- VII Precast/Prestressed Market Share vs. Total Construction

General Economic Overview

McGraw-Hill CMFS Summer 2008

- McGraw Hill Construction projected that the U S. construction market contracted approximately 9% to $625.4 billion in 2007. The contraction is expected to continue in 2008 with a projected reduction in total construction of 12% to $549.3 billion.

A snap shot of the most recent U.S. total construction market

($Billions):

2002	2003	2004	2005	2006
504.1	531.2	593.2	670.2	684.7
+2%	+5%	+12%	+13%	+2%

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US Total Construction Projections ($Billions)

McGraw-Hill CMFS Summer 2008

The construction outlook for 2006 to 2012 is projected to be:

US Total Construction ($Billions)

2006	2007	2008	2009	2010	2011	2012
684.7	626.5	549.3	587.7	672.5	748.9	780.3
+2%	-9%	-12%	+7%	+14%	+11%	+2

Overall, there are a weakness in the housing sector, higher oil prices, softer consumer spending, slower job creation, and a slight impact in inflation.

On the positive side, growth in institutional and public construction is expected in 2008.

Growing Concerns with Market Developments

FMI 4/30/08

	2007
Total Construction	-13%
Residential	-28%
Commercial	3%
Infrastructure	-1%
Square Footage Starts	-19%
Cement Consumption	-22%
Ready-Mix Production	-10%

Growing Concerns with Market Developments

	2007	2008 Outlook Beg. Yr	2008 Outlook Qtr I
Total Construction	-13%	-2%	
Residential	-28%	-4%	
Commercial	3%	-6%	
Infrastructure	-1%	4%	
Square Footage Starts	-19%		
Cement Consumption	-22%		
Ready-Mix Production	-10%		

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Commercial	3%	-6%	-6%
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Square Footage Starts	-19%		-10%
Cement Consumption	-22%		-10%
Ready-Mix Production	-10%		

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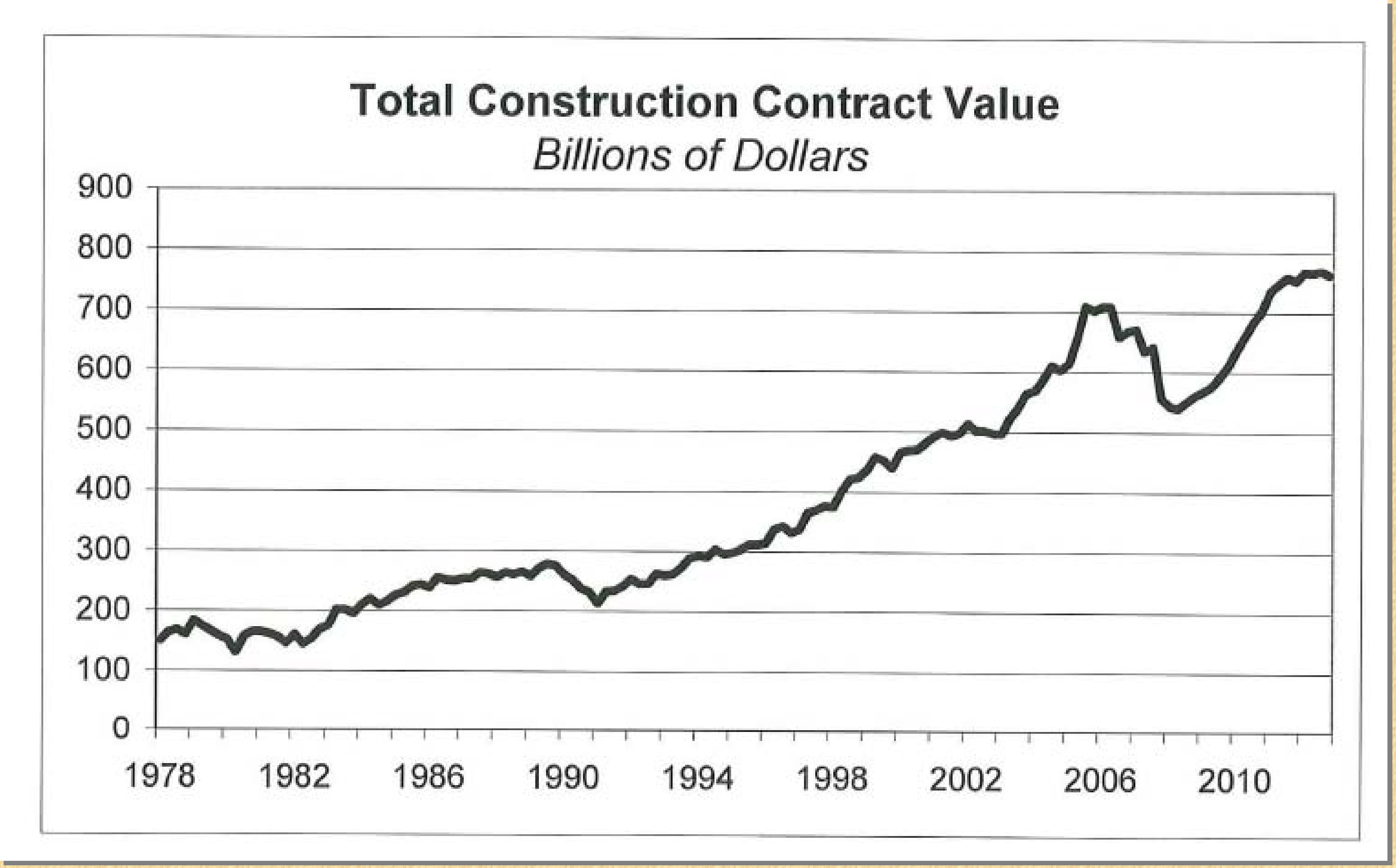
Construction Contract Value 1978 to 2013

McGraw-Hill Construction Outlook Summer 2008



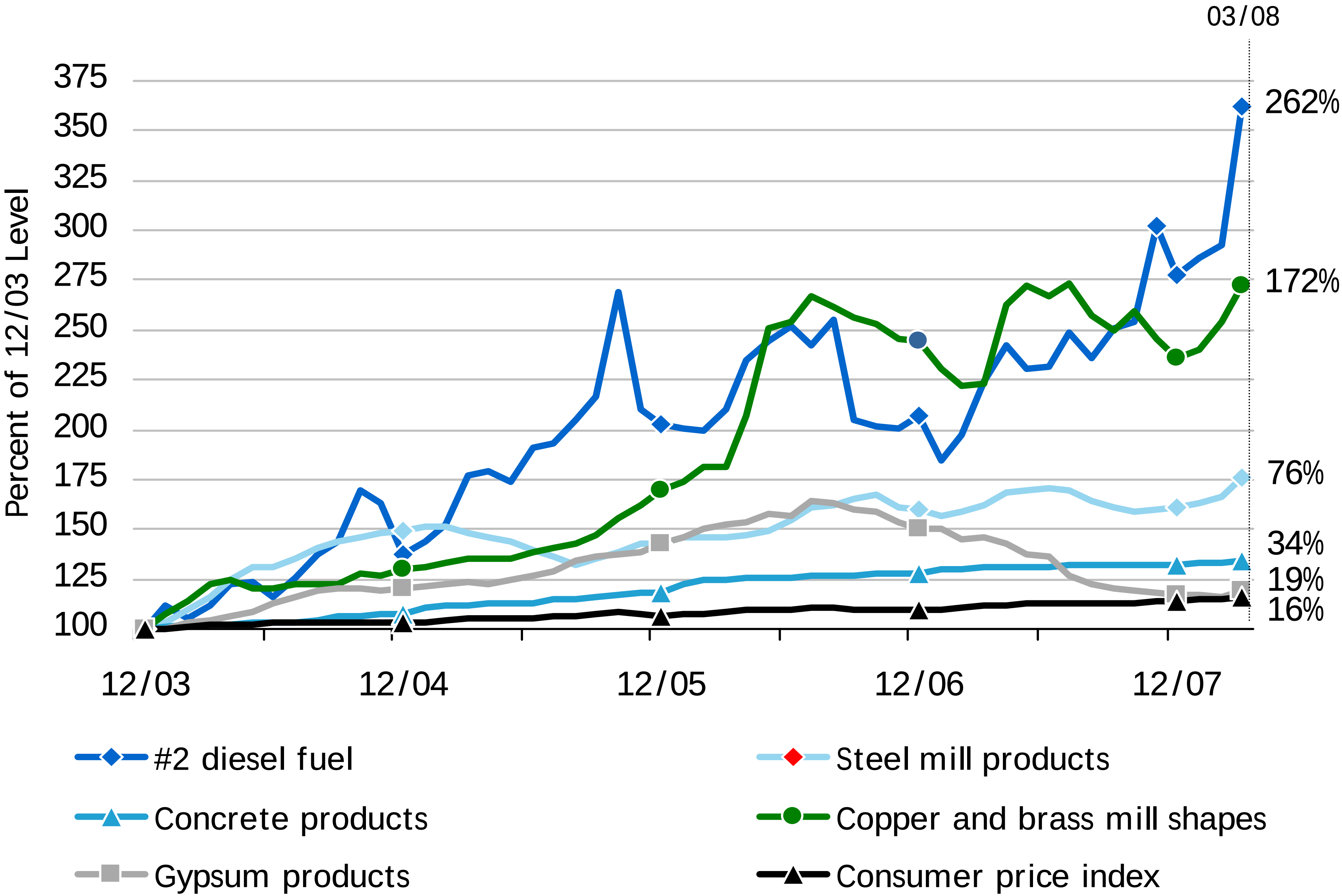
What Is Happening ? Residential Impact

- 2005: Record high for single family housing (SFH).
- 2006: 14% decline in SFH , but is offset by 16% increase in other construction segments
- 2007 ,The non-SFH segments grew 3%, but were substantially outweighed by a 25% plunge in SFH. As a result, total construction dropped 9%.
- 2008: Overall construction is projected to be down 12%.
  - Residential down 26%
  - Non-residential down 4%
  - Non-building up 1%

Precast Concern Highlights

- In 2008, several economic factors are impacting precast concrete producers, including rising material costs, rising energy costs, a U.S. transportation system that is at full capacity, foreign competition for raw and finished materials principally from China, and the declining value of the U.S. dollar.

Change in Producer Prices for Major Construction Inputs, 2003-2008
(December 2003 = 100%)



Prestressed Concrete PPI

Bureau of Labor Statistics 4/28/08

- **2004 2005 2006 2007 2008**
- **8.2% 14.3% 4.9% 1.2% 0.8%**

32.3% over 2003 Prestressed Concrete PPI

Precast Issues

- **A precast concrete producer uses a lot of wood, cement and steel in the construction of a precast component. All have seen increases in pricing in the last 3 years. Oil prices in the $100-per-barrel range are not the only construction material input that is experiencing unusual price fluctuations. Iron and steel scrap have increased more than 28 percent between 2006 and 2008, with construction sand/gravel/crushed stone up over 8 percent, selected steel products up almost 6 percent, and fabricated structural metal up more than 5 percent during the same period.**

On the bright side – There is a bright side

- Institutional building will rise 4% in 2008
  - Education +2%
  - Dormitories +5%
  - Hotels +6%

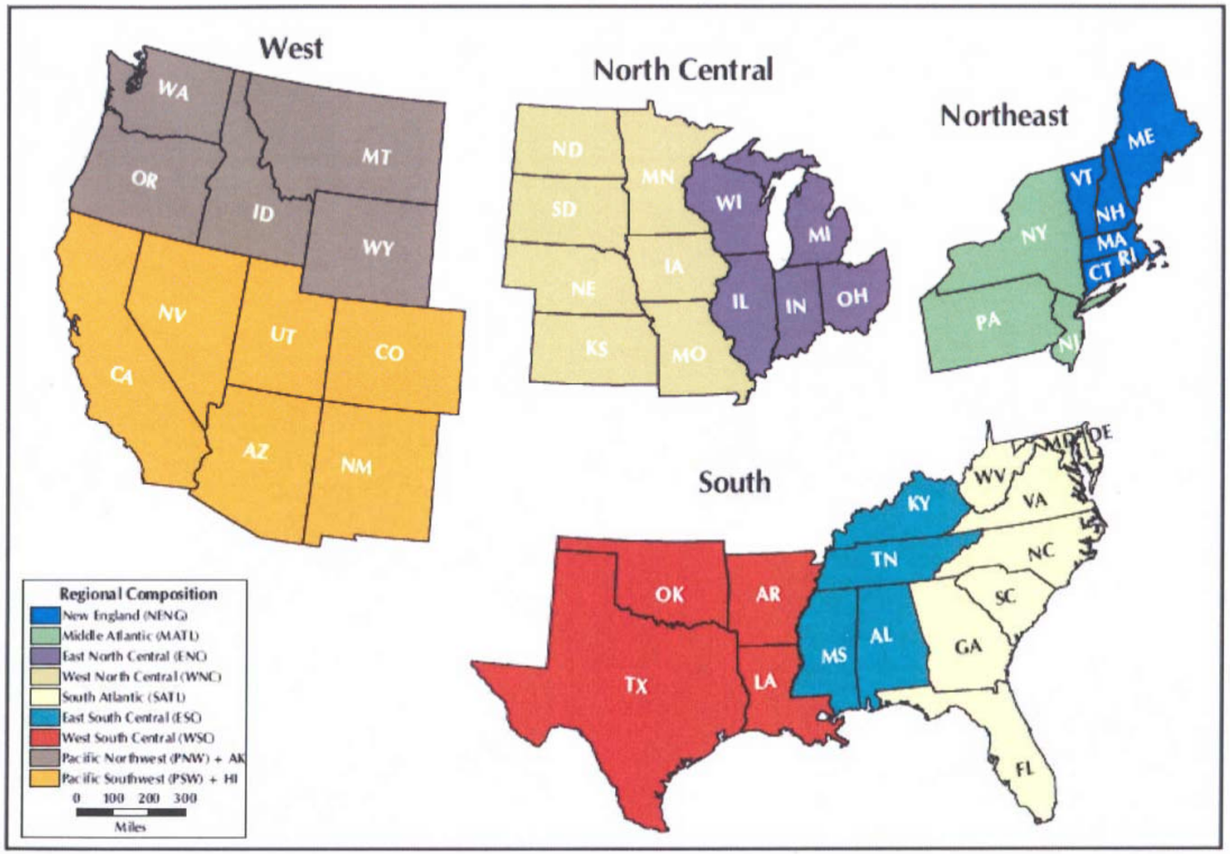
- Public works will increase 3%
  - Bridges +6% in 2008

State Budget Projected Shortfalls

March 2008, National Association of State Budget Officers (NASBO)

Public construction is 50% of total cement consumption
90% of public construction is performed at the state level

COMPOSITION OF THE REGIONS



Appendix A

By Region % Change year over year

	2007	2008	2009	2010	2011	2012
U.S.	**-9%**	**-5%**	**+7%**	**+13%**	**+5%**	**+3%**
Northeast	-7	-1	+7	+7	+4	+2
• New England	+6	-3	+8	+9	+6	+3
• Middle Atlantic	-11	NC	+6	+7	+4	+2
North Central	-7	-1	+6	+10	+4	+2
• ENC	-10	-1	+6	+10	+5	+2
• WNC	-1	-5	+6	+9	+4	+2
South	-9	-3	+10	+11	+4	+2
• South Atlantic	-10	-4	+10	+13	+4	+3
• ESC	-3	-1	+8	+10	+5	+3
• WSC	-9	-3	+10	+8	+4	+1
West	-9	-1	+8	+12	+5	+1
• Pac NW	+2	-8	+7	+10	+3	+2
• Pac SW	-12	+1	+9	+13	+5	+1

Source: McGraw-Hill Construction Outlook 2008

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Construction Patterns 2002 to 2008

Construction Outlook 2008

The Pattern of U.S. Construction Starts

Billions of Dollars

	2002	2003	2004	2005	2006	2007	2008
Total Construction	504.0	531.9	593.0	668.9	682.5	626.7	614.1
	+2%	+6%	+11%	+13%	+2%	-8%	-2%
Single Family Housing	214.2	242.3	282.7	315.5	272.4	204.0	197.8
	+15%	+13%	+17%	+12%	-14%	-25%	-3%
Multifamily Housing	34.5	41.0	50.4	68.3	69.6	61.4	56.4
	+5%	+19%	+23%	+35%	+2%	-12%	-8%
Commercial Buildings	59.6	58.9	67.2	72.0	91.4	97.4	91.1
	-15%	-1%	+14%	+7%	+27%	+7%	-6%
Institutional Buildings	90.0	90.4	89.1	99.7	109.8	114.0	118.7
	-1%	-0-	-1%	+12%	+10%	+4%	+4%
Manufacturing Buildings	5.5	6.9	8.0	10.0	13.3	18.6	16.5
	-31%	+25%	+17%	+24%	+33%	+40%	-11%
Public Works	88.2	83.5	88.2	95.8	112.2	117.9	121.0
	+6%	-5%	+6%	+9%	+17%	+5%	+3%
Electric Utilities	12.1	8.9	7.3	7.8	13.8	13.4	12.7
	-50%	-26%	-18%	+6%	+78%	-3%	-5%

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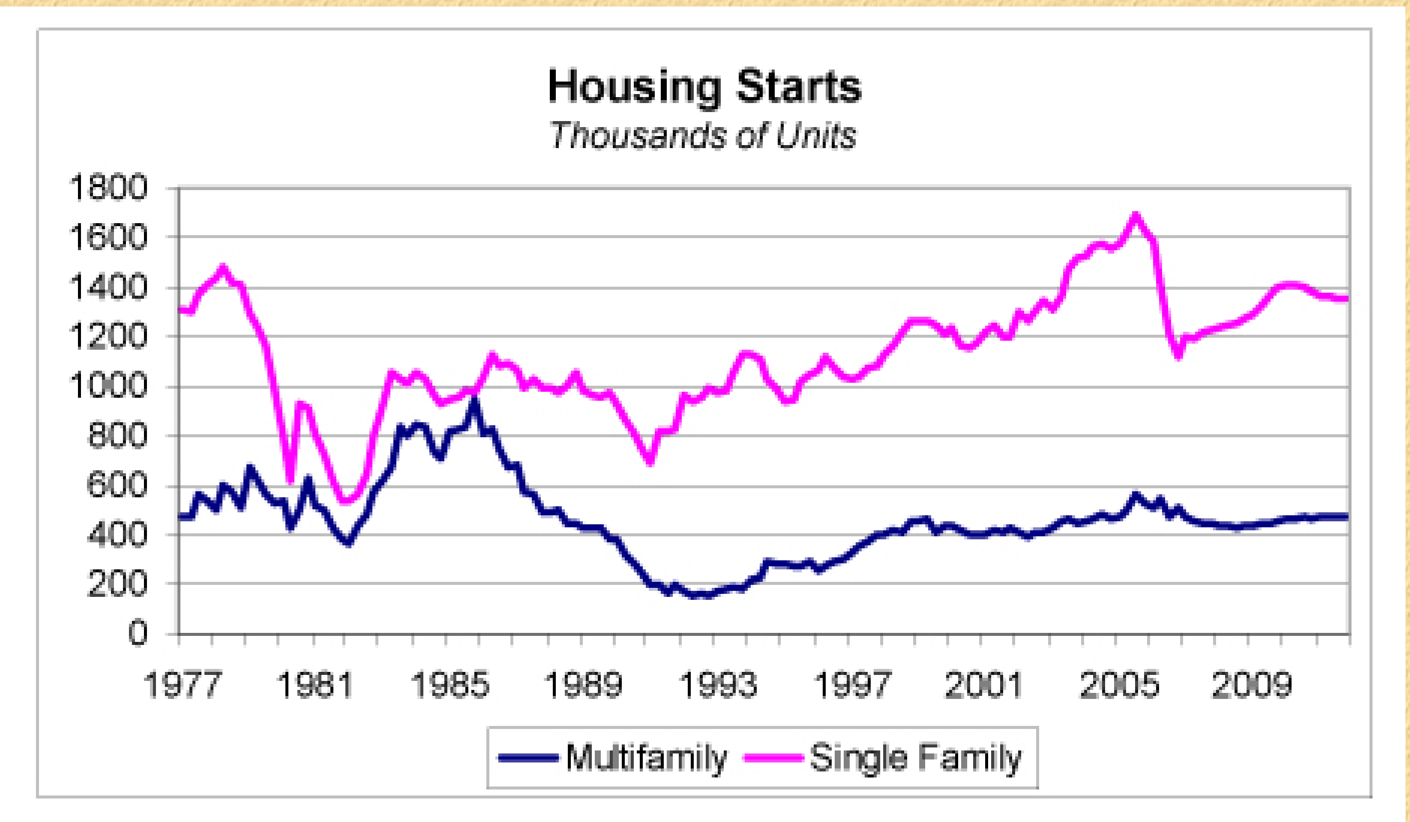
Housing Starts

National Association of Home Builders 1/08



2005 high of 2153 units vs. a projection of 1280 units for 2008

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Nonbuilding Contract Value

Total Nonbuilding Contract Value for the United States

Billions of Dollars

	HISTORY				FORECAST					
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Nonbuilding	**92.36**	**95.52**	**103.55**	**126.03**	**131.30**	**133.65**	**135.50**	**140.70**	**149.00**	**157.15**
% Chg	*-8*	*+3*	*+8*	*+22*	*+4*	*+2*	*+1*	*+4*	*+6*	*+5*
Public Works	**83.49**	**88.21**	**95.78**	**112.19**	**117.90**	**120.95**	**122.50**	**127.20**	**134.50**	**141.35**
% Chg	*-5*	*+6*	*+9*	*+17*	*+5*	*+3*	*+1*	*+4*	*+6*	*+5*
Streets	30.89	31.46	33.00	37.58	39.70	41.40	43.40	46.30	50.30	53.60
% Chg	*-5*	*+2*	*+5*	*+14*	*+6*	*+4*	*+5*	*+7*	*+9*	*+7*
Bridges	11.26	9.98	11.39	13.24	14.60	15.50	15.40	15.80	16.60	17.55
% Chg	*+3*	*-11*	*+14*	*+16*	*+10*	*+6*	*-1*	*+3*	*+5*	*+6*
Dams/Water Dev.	6.02	6.01	7.23	8.47	7.90	8.30	8.90	9.50	10.00	10.40
% Chg	*-14*	*-0*	*+20*	*+17*	*-7*	*+5*	*+7*	*+7*	*+5*	*+4*
Sewers	10.68	11.46	13.26	14.49	16.00	16.25	16.60	16.60	17.20	17.80
% Chg	*+3*	*+7*	*+16*	*+9*	*+10*	*+2*	*+2*	*+0*	*+4*	*+3*
Water Supply	8.54	9.66	10.90	10.34	12.40	12.40	12.30	13.30	14.10	14.70
% Chg	*-13*	*+13*	*+13*	*-5*	*+20*	*+0*	*-1*	*+8*	*+6*	*+4*
Other Nonbuilding	16.10	19.64	20.01	28.08	27.30	27.10	25.90	25.70	26.30	27.30
% Chg	*-7*	*+22*	*+2*	*+40*	*-3*	*-1*	*-4*	*-1*	*+2*	*+4*
Utilities	**8.87**	**7.31**	**7.77**	**13.84**	**13.40**	**12.70**	**13.00**	**13.50**	**14.50**	**15.80**
% Chg	*-26*	*-18*	*+6*	*+78*	*-3*	*-5*	*+2*	*+4*	*+7*	*+9*

Portland Cement Consumption

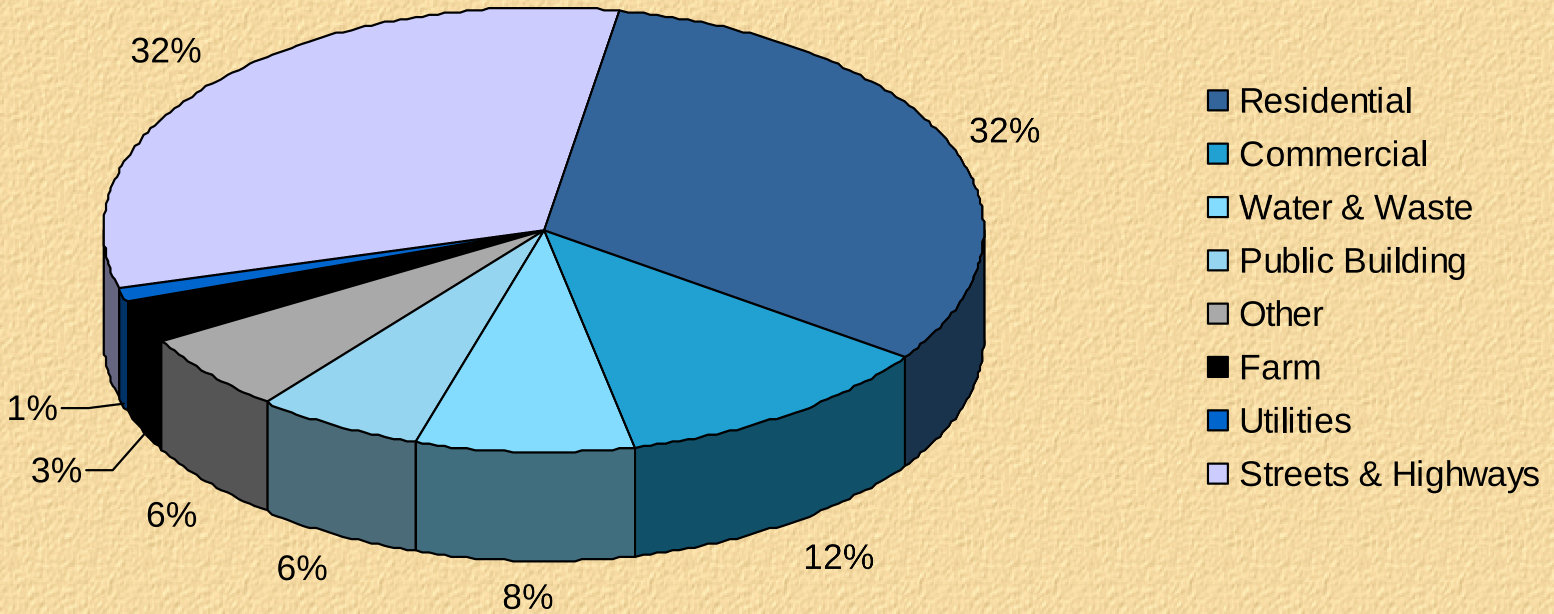
PCA Spring 2008

Percent Change	2006	2007	2008	2009
Total Cement Consumption	-0.7%	-22.4%	-10.3%	-3.4%
Portland Cement	-0.6%	-6.4%	-2.5%	-3.6%
Masonry Cement	- 1.6%	-15.7%	-2.2%	+0.7%
Cement Imports	+6.7%	-36.7%	-49.6%	-36.5%

A recovery in housing starts is not projected until mid to late 2009

U.S. Cement Markets by Segment

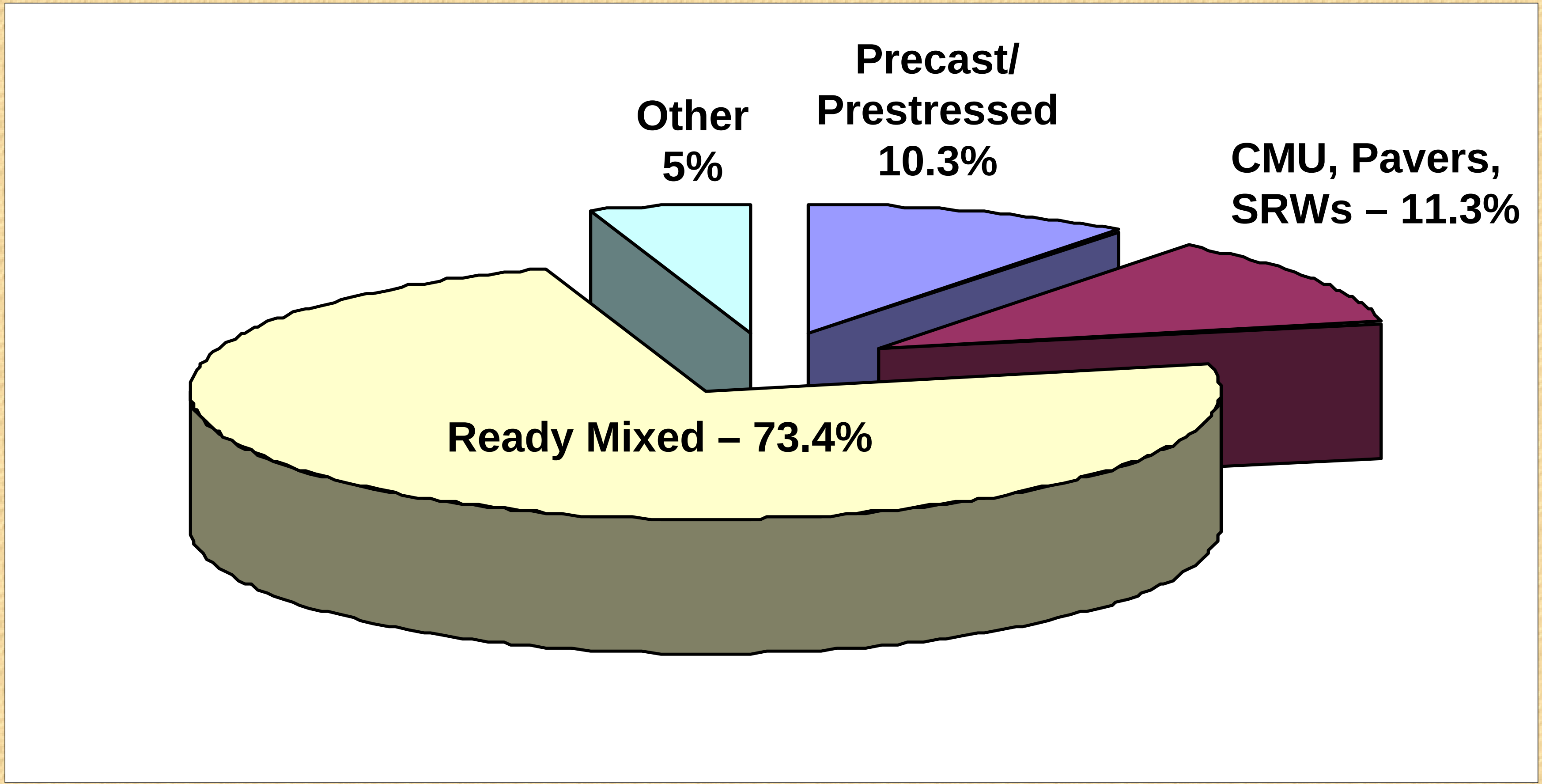
PCA 1/08



U.S. Cement Consumption by Industry Sector – 2007

Portland Cement Association

115,000,000 Metric Tons



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Concrete Production by Industry Sector

Concrete Use and Production (Million Cubic Yards yd3)

Year	Total	Ready Mix	Precast Prestressed	Other*
2002	424.0	338.8	42.6	42.6
2004	441.4	352.6	44.35	44.0
2006	465.5	372.0	46.9	46.6
2008	504.4	387.3	50.8	50.4
2010	546.6	419.7	55.0	54.6
2011	569.0	436.9	57.3	56.8

***Masonry Concrete Products: Pipe, Block, SRWs, roof tiles etc.**

Note: data as per Hochberg & Company Marketing –Technical Study, page 4

Projections use 500 pounds of cement per yd3 for ready mix concrete.
Projections use 700 pounds of cement per yd3 for precast/prestressed concrete.

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Precast/Prestressed Segment Breakdown
by Concrete Production

- 48,745,000 Million Cubic Yards for 2007
- 63% Structural/Arch ($34,486,000\ yd^3$)
- 33% Utility ($16,259,000\ yd^3$)
- 4% Architectural Wall Panels ($1,969,000\ yd^3$)

Precast Market Revenue by Segment 2007

PCI – Structural/Architectural Precast

- Large volume producers
- 252 U.S. producers
- 39 Canadian producers
- $5.5 billion in sales volume in 2007

- NPCA - Underground, Water Conveyance, Utility Producers
  - 551 producers
  - $26 billion in sales volume

- APA - Architectural Wall Panel Producers
  - Small in size and number
  - 47 producers
  - 1 Canadian producer
  - $650 million in sales volume

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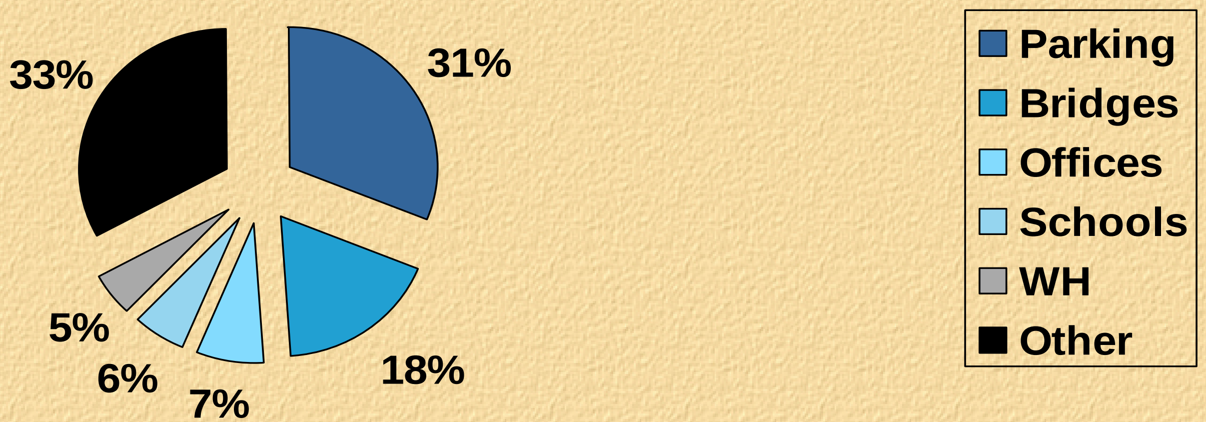
Primary Segments of Precast Construction Industry Sales (Percent)

Primary Precast Segments



Other includes Stores, Hospitals, Multifamily, Religious, Offices and Government, Hotels and Residential

Parking garages, schools, and bridge construction are the few segments that will grow in 2008, allowing for projected growth within the precast concrete industry sector. These segments account for over 50% of precast sales volume.

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Precast/Prestressed Market Projections PCI Type Producer

Year	Growth	PCI Type Market Size
2005	2%	$5.0 B
2006	3%	$5.2 B
2007	5%	$5.5 B
2008	5%	$5.7 B
2009	3%	$5.9 B
2010	2%	$6.0 B

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Reference CPCI Data

Total Construction	$ CDN	Precast Sales	%
2001	$135 B	$425 M	0.31%
2004	$157 B	$565 M	0.36%
2005	$162 B	$546 M	0.33%
2006	$171 B	$655 M	0.38%
2007	$172 B	$721 M	0.42%
2008	$174 B	$757 M	0.44%

Data from CPCI Marketing Committee

Precast/Prestressed Market Share vs. Total Construction

Estimated Year	Total Construction	Precast/Prestressed	Market Share (%)
2005	$663.5 B	$5.0 B	0.8 %
2006	$671.2 B	$5.2B	0.8%
2007	$656.6	$5.5 B	0.8%
2008	$675.7 B	$5.7 B	0.9%
2010	$751.2 B	$6.0 B	0.8%

Precast/Prestressed production is projected to keep pace with the overall total construction, put in place $ value, as projected by McGraw Hill 2007 Forecast.

Sustainability & Green Construction Opportunity

- According to FMI, green nonresidential construction put in place was $13.4 billion in 2006 and in 2008 is projected to be $21.2 billion.
- The growth in green construction has created a shift in perception among owners and the architectural and engineering communities.
- Construction-industry stakeholders have embraced the green movement and sustainable design for its energy savings, worker productivity increases, and positive public perception, the report states.

Key Trend Opportunity

- The construction industry is seeing increased adoption of sustainable design and the use of green materials.
- In 2006, 2% of the nonresidential building stock was registered under the LEED criteria by the USGBC.
- It is estimated that in 2010, green construction will comprise 10% of nonresidential buildings.
- Precast/prestressed concrete is an ideal sustainable material.