Green Building Studio™ AEC Design Practice Study 2004

Final Report

GeoPraxis

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Appendix

Questionnaire (web-based survey instrument)

INTRODUCTION

This report contains a detailed statistical analysis of the results of the **Green Building Studio AEC Design Practice Study 2004** web survey conducted between May 24 and June 30, 2004. GeoPraxis conducted the survey and a large portion was funded by California utility customers under the auspices of Pacific Gas & Electric Company (Savings By Design Program[1]) and the California Public Utility Commission. Significant additional support and assistance was provided by McGraw-Hill Construction, Autodesk, and Bentley Systems. The survey was completed using the Vista™ Survey System (http://ds2.vanguardsw.com/survey/).[2]

The results analysis includes answers from all 687 respondents who took the survey in the 38-day period from Monday, May 24, 2004 to Wednesday, June 30, 2004 inclusive.

REPORT CONTENTS

This report is divided into three sections:

- Introduction
- Results Analysis
- Notes

The Introduction (this section) contains an overview of the report structure. The Results Analysis section contains a summary and statistical analysis of the results to each question in the survey. The Notes section contains definitions of key terms and tips on how to interpret the results.

In the Appendix, the original web-based survey instrument lists all the questions in the online Questionnaire. This is provided as a reference to help in the interpretation of the results.

Confidence Intervals

Wherever possible, results are presented with an indication of the accuracy of the results. Usually this is presented in the form of a confidence interval. It is important when reviewing survey results to make sure that any conclusions that may be drawn should be based only on statistically significant results.

Correlation Analysis

In preparing the results analysis, the Vista™ report generator has examined all questions in pairs to see if there are any correlations between answers. Whenever a significant correlation is found, it is noted. This information can be valuable in determining what demographic or tool use characteristics tend to drive key measures such as overall satisfaction.

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[1] The Savings By Design Program encourages high-performance nonresidential building design and construction and is sponsored by California's four investor-owned utilities under the auspices of the California Public Utilities Commission.

[2] Report format © Copyright 2004, Vanguard Software Corporation. All rights reserved.

*Geo*Praxis

RESULTS ANALYSIS

Survey Name:
Green Building Studio AEC Design Practice Study 2004 (Vista: "GBS Survey Final")

Start date: Monday, May 24, 2004

End date: Wednesday, June 30, 2004

Number of respondents: 687

Filter: Include all respondent's answers.

Survey Introduction:

i)

Welcome to the Green Building Studio web survey.
Your valuable insight will assist us as well as our industry partners, McGraw-Hill Construction, Autodesk, and Bentley design better solutions to meet your business needs. If you are eligible and complete this survey you will be entered into our sweepstakes for an Apple iPod mini.

A large portion of this survey is funded by California utility customers under the auspices of Pacific Gas & Electric Company and the California Public Utility Commission.

By clicking the Next button below you agree you have read and understand the sweepstakes rules at the link below.

1)   Does your firm assist in the design of buildings or building interiors?

Filter

Yes	(585)	85.2%
No	(102)	14.8%
Total	(687)	
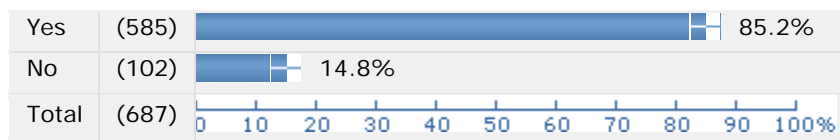
Confidence: +/-2.7%

ii)   *Go to question v if question 1 is No*

2)   About yourself and your firm.

2a)   Which of these best characterizes your primary work responsibility?

Filter

Architect	(288)	49.2%
Contractor	(10)	1.7%
Construction Manager	(15)	2.6%
Developer or Developer's Agent/Assistant	(11)	1.9%
Designer	(90)	15.4%
NonStructural Engineer	(32)	5.5%
Structural Engineer	(13)	2.2%
Energy Code Compliance Specialist	(7)	1.2%
Energy Analyst	(30)	5.1%
CAD Drafter	(71)	12.1%
Academic	(18)	3.1%
Total	(585)	
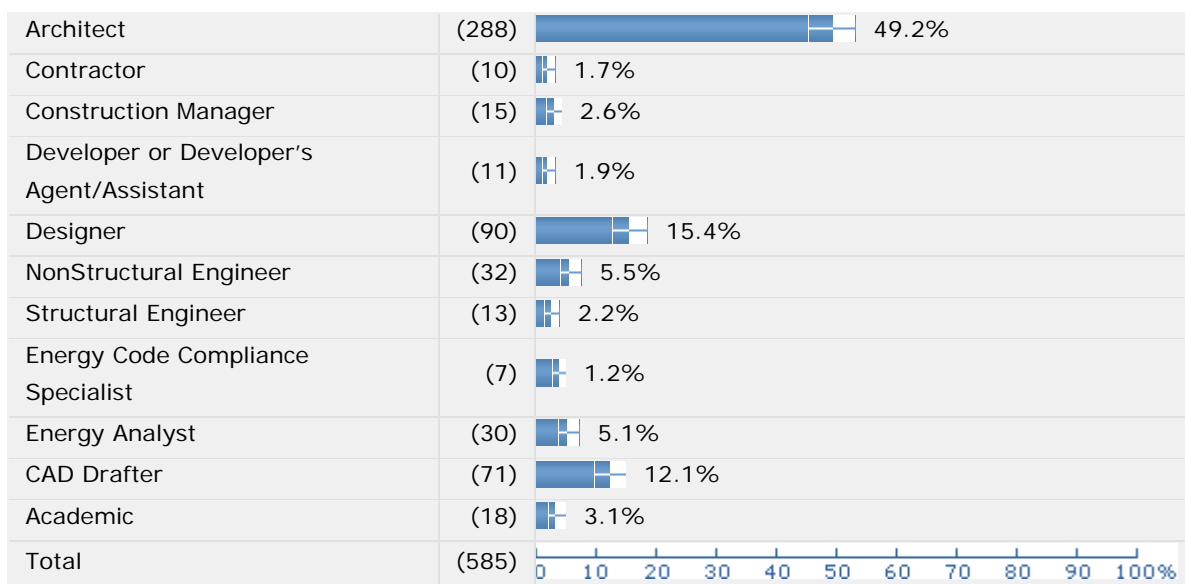
Confidence: +/-4.1%

2b)   Which of these best characterizes the type of firm you work in?

[Filter](#)

Architectural Design Firm	(301)	51.5%
Engineering Design Firm	(75)	12.8%
Architectural and Engineering Design Firm	(78)	13.3%
Design/Build Contracting Firm	(47)	8.0%
Specialty Contracting Firm	(11)	1.9%
Organization That Owns and/or Operates Buildings	(19)	3.2%
Building Product Manufacturer	(10)	1.7%
Other	(44)	7.5%
Total	(585)	0 10 20 30 40 50 60 70 80 90 100%
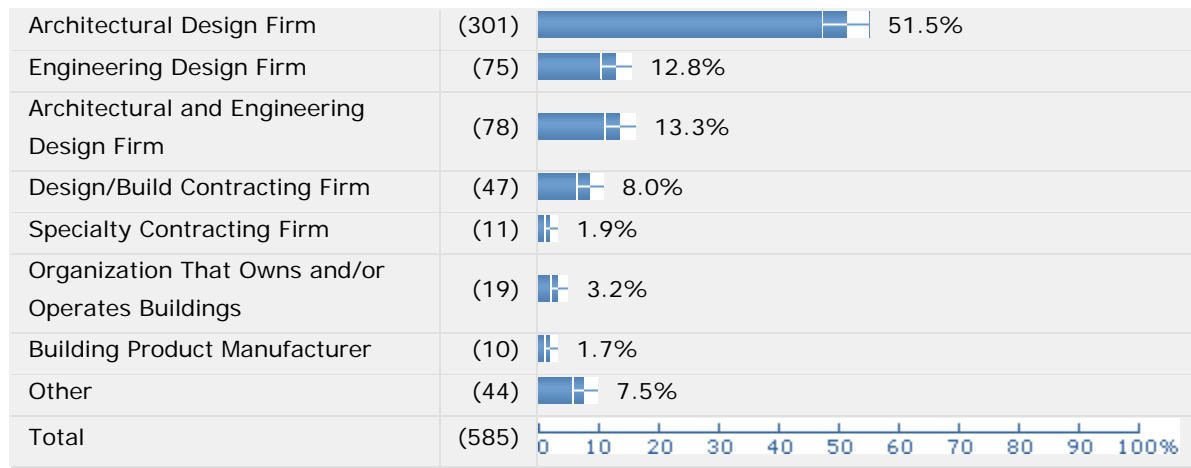
Confidence: +/-4.1%

3)   Indicate all CAD tools currently *used* by yourself.

[Filter](#)

CAD Tool	Count	Percentage
Autodesk 3ds MAX (3D Studio MAX)	(61)	10.4%
Autodesk VIZ (3D Studio VIZ)	(95)	16.2%
Autodesk Architectural Desktop	(196)	33.5%
Autodesk Architectural Studio	(36)	6.2%
Autodesk AutoCAD	(320)	54.7%
Autodesk Building Systems	(50)	8.5%
Autodesk Revit	(96)	16.4%
Accurender	(25)	4.3%
Architrion	(1)	0.2%
Arris	(2)	0.3%
Bentley Architecture	(18)	3.1%
Bentley Structural and/or HVAC	(5)	0.9%
Bentley MicroStation	(71)	12.1%
Bentley MicroStation TriForma	(28)	4.8%
DataCAD	(8)	1.4%
DesignWorkshop	(5)	0.9%
FormZ	(37)	6.3%
GDS or MicroGDS	(2)	0.3%
Graphisoft ArchiCAD	(130)	22.2%
IntelliCAD	(15)	2.6%
Nemetschek ALLPLAN	(1)	0.2%
Nemetschek MiniCAD	(0)	0.0%
Nemetschek VectorWorks	(21)	3.6%
PowerCADD	(15)	2.6%
SketchUp	(104)	17.8%
TurboCAD	(13)	2.2%
Other	(62)	10.6%
Don't use CAD	(22)	3.8%
Total	(585)	

Confidence: +/-4.0%

iii)
   Go to question 12 if question 3 is Don't use CAD

4)   **2D-CAD drawing and drafting.** We want to know which application you use most frequently for developing 2D drawings. Please include 2D derived drawings from 3D drawings or models.

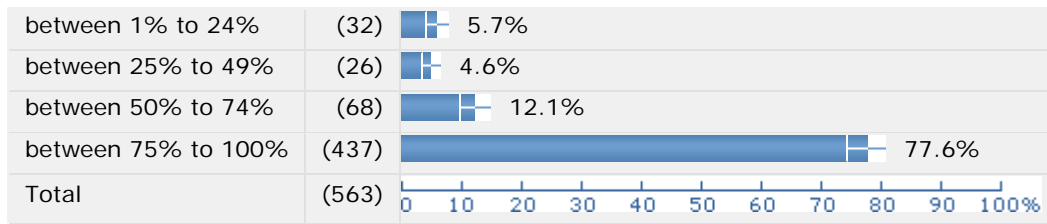4a)   Select the application you use most frequently for 2D drawings.
Filter

Application	Count	Percent
Autodesk 3ds MAX (3D Studio MAX)	(0)	0.0%
Autodesk VIZ (3D Studio VIZ)	(0)	0.0%
Autodesk Architectural Desktop	(96)	17.1%
Autodesk Architectural Studio	(3)	0.5%
Autodesk AutoCAD	(204)	36.2%
Autodesk Building Systems	(25)	4.4%
Autodesk Revit	(35)	6.2%
Accurender	(0)	0.0%
Architrion	(3)	0.5%
Arris	(0)	0.0%
Bentley Architecture	(6)	1.1%
Bentley Structural and/or HVAC	(1)	0.2%
Bentley MicroStation	(30)	5.3%
Bentley MicroStation TriForma	(8)	1.4%
DataCAD	(6)	1.1%
DesignWorkshop	(3)	0.5%
FormZ	(1)	0.2%
GDS or MicroGDS	(1)	0.2%
Graphisoft ArchiCAD	(100)	17.8%
IntelliCAD	(3)	0.5%
Nemetschek ALLPLAN	(0)	0.0%
Nemetschek MiniCAD	(0)	0.0%
Nemetschek VectorWorks	(13)	2.3%
PowerCADD	(4)	0.7%
SketchUp	(3)	0.5%
TurboCAD	(3)	0.5%
Other	(15)	2.7%
Total	(563)	

Confidence: +/-4.0%

5)   What % of projects do you use [Q4a] for 2D drawings?
Filter

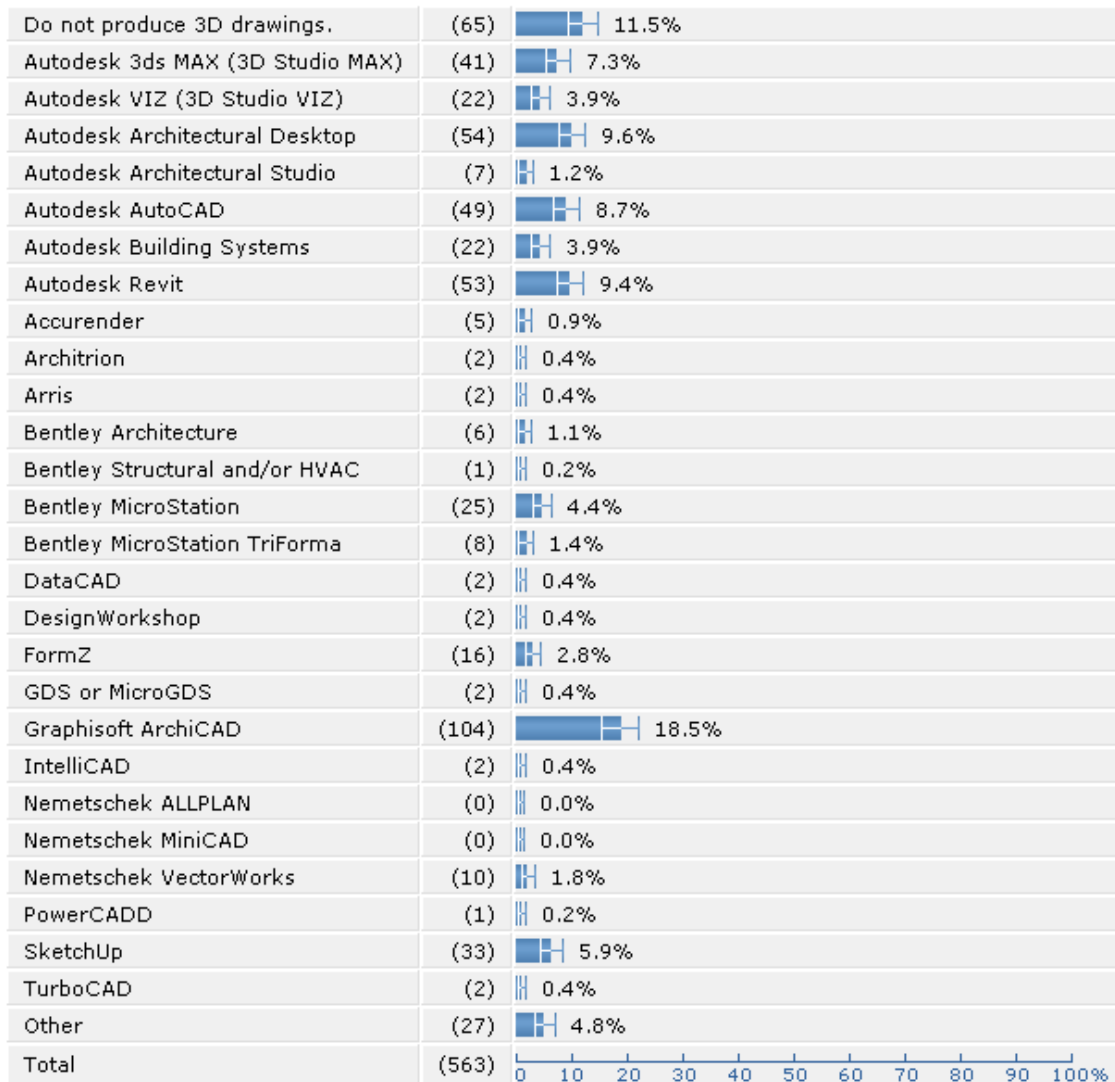|			
between 1% to 24%	(32)		5.7%
between 25% to 49%	(26)		4.6%
between 50% to 74%	(68)		12.1%
between 75% to 100%	(437)		77.6%
Total	(563)	0 10 20 30 40 50 60 70 80 90 100%	

Confidence: +/-3.4%

6)   **3D-CAD drawings, images, and renderings.** We want to know which application you use most frequently for specifically developing 3D drawings, images, or renderings *not* 3D models or Building Information Models (BIM).

6a) Select the application you use most frequently for 3D drawings.
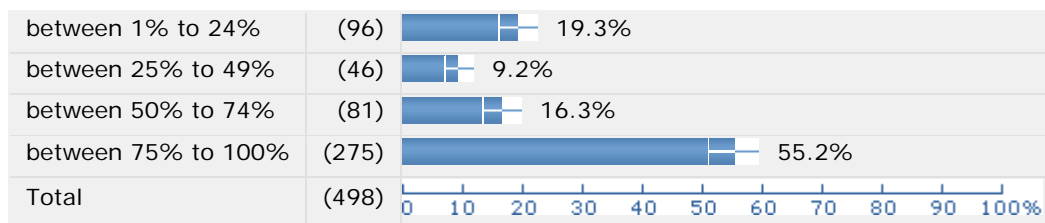Filter

Application	Count		Percent
Do not produce 3D drawings.	(65)		11.5%
Autodesk 3ds MAX (3D Studio MAX)	(41)		7.3%
Autodesk VIZ (3D Studio VIZ)	(22)		3.9%
Autodesk Architectural Desktop	(54)		9.6%
Autodesk Architectural Studio	(7)		1.2%
Autodesk AutoCAD	(49)		8.7%
Autodesk Building Systems	(22)		3.9%
Autodesk Revit	(53)		9.4%
Accurender	(5)		0.9%
Architrion	(2)		0.4%
Arris	(2)		0.4%
Bentley Architecture	(6)		1.1%
Bentley Structural and/or HVAC	(1)		0.2%
Bentley MicroStation	(25)		4.4%
Bentley MicroStation TriForma	(8)		1.4%
DataCAD	(2)		0.4%
DesignWorkshop	(2)		0.4%
FormZ	(16)		2.8%
GDS or MicroGDS	(2)		0.4%
Graphisoft ArchiCAD	(104)		18.5%
IntelliCAD	(2)		0.4%
Nemetschek ALLPLAN	(0)		0.0%
Nemetschek MiniCAD	(0)		0.0%
Nemetschek VectorWorks	(10)		1.8%
PowerCADD	(1)		0.2%
SketchUp	(33)		5.9%
TurboCAD	(2)		0.4%
Other	(27)		4.8%
Total	(563)		

Confidence: +/-3.2%

7)
      What % of projects do you use [Q6a] for 3D drawings, images, or renderings not models or BIM?
Filter

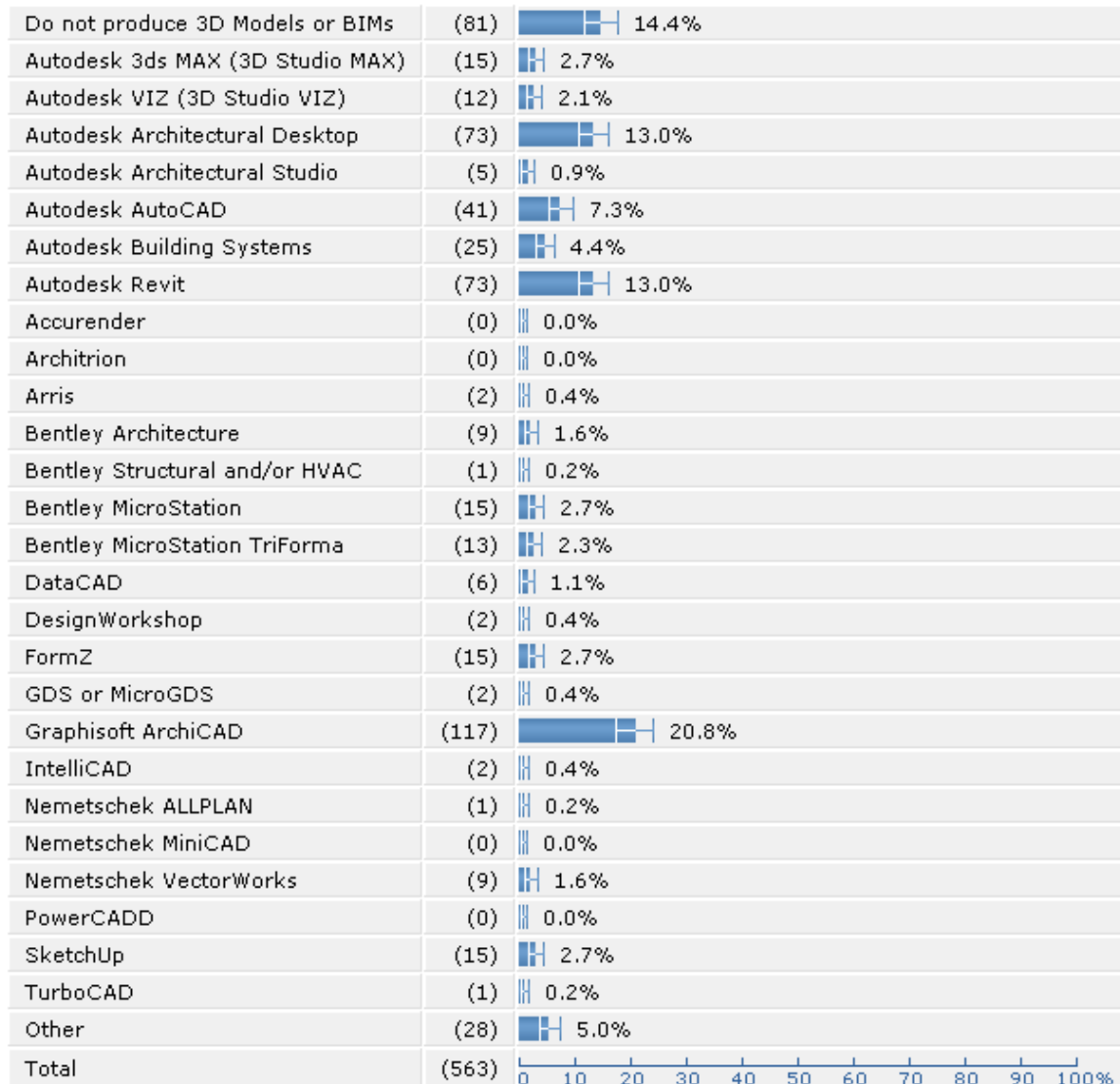|			
between 1% to 24%	(96)		19.3%
between 25% to 49%	(46)		9.2%
between 50% to 74%	(81)		16.3%
between 75% to 100%	(275)		55.2%
Total	(498)	0 10 20 30 40 50 60 70 80 90 100%	

Confidence: +/-4.4%

This question is asked if the answer to question 6a is *Autodesk 3ds MAX (3D Studio MAX)* or *Autodesk VIZ (3D Studio VIZ)* or *Autodesk Architectural Desktop* or *Autodesk Architectural Studio* or *Autodesk AutoCAD* or *Autodesk Building Systems* or *Autodesk Revit* or *Accurender* or *Architrion* or *Arris* or *Bentley Architecture* or *Bentley Structural and/or HVAC* or *Bentley MicroStation* or *Bentley MicroStation TriForma* or *DataCAD* or *DesignWorkshop* or *FormZ* or *GDS or MicroGDS* or *Graphisoft ArchiCAD* or *IntelliCAD* or *Nemetschek ALLPLAN* or *Nemetschek MiniCAD* or *Nemetschek VectorWorks* or *PowerCADD* or *SketchUp* or *TurboCAD* or *Other*.

8) **3D-CAD modeling and Building Information Models (BIM).** We want to know which application you use most frequently for developing 3D models or BIMs.

8a) Select the application you use most frequently for 3D models or BIM.
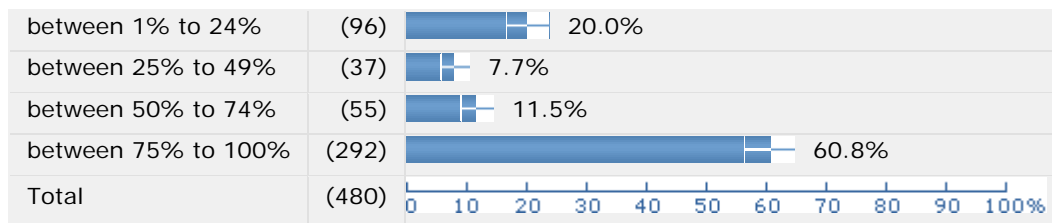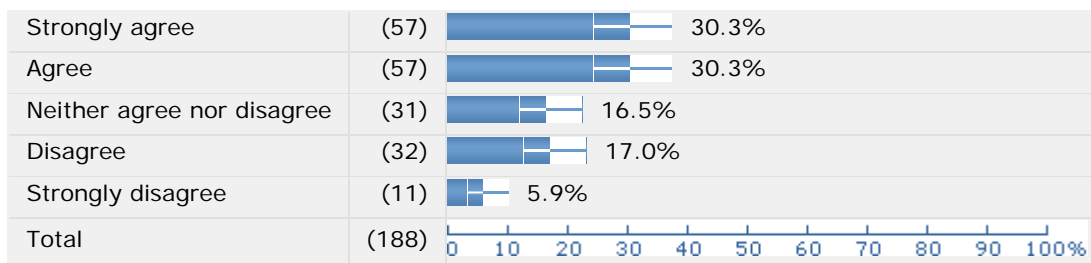
Filter

Application	Count	%
Do not produce 3D Models or BIMs	(81)	14.4%
Autodesk 3ds MAX (3D Studio MAX)	(15)	2.7%
Autodesk VIZ (3D Studio VIZ)	(12)	2.1%
Autodesk Architectural Desktop	(73)	13.0%
Autodesk Architectural Studio	(5)	0.9%
Autodesk AutoCAD	(41)	7.3%
Autodesk Building Systems	(25)	4.4%
Autodesk Revit	(73)	13.0%
Accurender	(0)	0.0%
Architrion	(0)	0.0%
Arris	(2)	0.4%
Bentley Architecture	(9)	1.6%
Bentley Structural and/or HVAC	(1)	0.2%
Bentley MicroStation	(15)	2.7%
Bentley MicroStation TriForma	(13)	2.3%
DataCAD	(6)	1.1%
DesignWorkshop	(2)	0.4%
FormZ	(15)	2.7%
GDS or MicroGDS	(2)	0.4%
Graphisoft ArchiCAD	(117)	20.8%
IntelliCAD	(2)	0.4%
Nemetschek ALLPLAN	(1)	0.2%
Nemetschek MiniCAD	(0)	0.0%
Nemetschek VectorWorks	(9)	1.6%
PowerCADD	(0)	0.0%
SketchUp	(15)	2.7%
TurboCAD	(1)	0.2%
Other	(28)	5.0%
Total	(563)	

Confidence: +/-3.4%

9) What % of projects do you use [Q8a] for 3D models or BIM?

Filter

between 1% to 24%	(96)		20.0%
between 25% to 49%	(37)		7.7%
between 50% to 74%	(55)		11.5%
between 75% to 100%	(292)		60.8%
Total	(480)		

Confidence: +/-4.4%

This question is asked if the answer to question 8a is *Autodesk 3ds MAX (3D Studio MAX)* or *Autodesk VIZ (3D Studio VIZ)* or *Autodesk Architectural Desktop* or *Autodesk Architectural Studio* or *Autodesk AutoCAD* or *Autodesk Building Systems* or *Autodesk Revit* or *Accurender* or *Architrion* or *Arris* or *Bentley Architecture* or *Bentley Structural and/or HVAC* or *Bentley MicroStation* or *Bentley MicroStation TriForma* or *DataCAD* or *DesignWorkshop* or *FormZ* or *GDS or MicroGDS* or *Graphisoft ArchiCAD* or *IntelliCAD* or *Nemetschek ALLPLAN* or *Nemetschek MiniCAD* or *Nemetschek VectorWorks* or *PowerCADD* or *SketchUp* or *TurboCAD* or *Other*.

10)   Please indicate the extent to which you agree with the reasons you don't use [Q8a] more often:

This question is asked if the answer to question 9 is *between 1% to 24%* or *between 25% to 49%* or *between 50% to 74%*.

10a) Our clients want 2D-CAD(AutoCAD, DWG) files

Filter

Strongly agree	(57)		30.3%
Agree	(57)		30.3%
Neither agree nor disagree	(31)		16.5%
Disagree	(32)		17.0%
Strongly disagree	(11)		5.9%
Total	(188)		

Confidence: +/-6.5%   Average Score: 2.38

Correlation (0.66) found between this question and Q10b (*Other team members want 2D drawings (AutoCAD, DWG)*).

Correlation (0.26) found between this question and Q11b (*If clients asked me to use it*).

10b) Other team members want 2D drawings (AutoCAD, DWG)

Filter

Strongly agree	(51)		27.1%
Agree	(70)		37.2%
Neither agree nor disagree	(36)		19.1%
Disagree	(24)		12.8%
Strongly disagree	(7)		3.7%
Total	(188)		
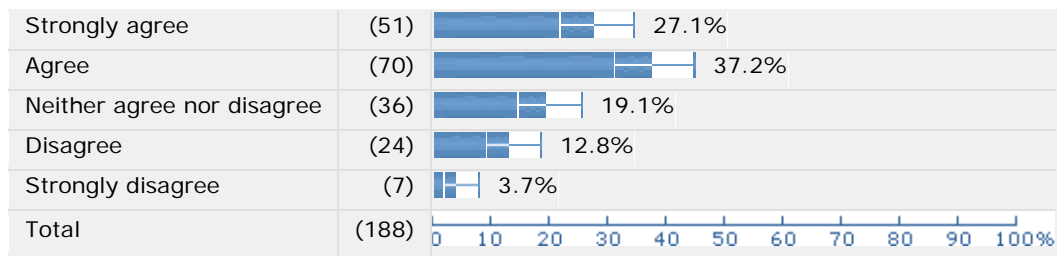
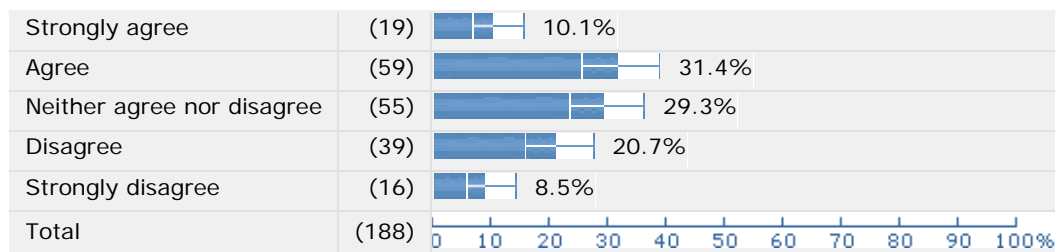Confidence: +/-6.8%   Average Score: 2.29

Correlation (0.66) found between this question and Q10a (*Our clients want 2D-CAD(AutoCAD, DWG) files*).

Correlation (0.32) found between this question and Q11c (*If team members asked for it.*).

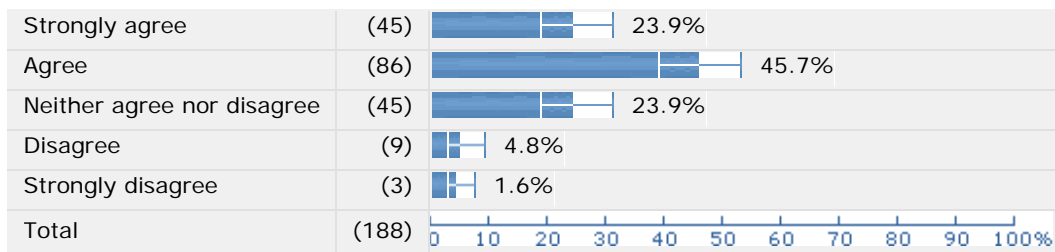Correlation (-0.30) found between this question and Q29 (*When your firm approaches team member firms for whole building energy analysis, do you offer to prov...*).

10c)   [Q10] does not do everything I need it to do

Filter

Strongly agree	(19)		10.1%
Agree	(59)		31.4%
Neither agree nor disagree	(55)		29.3%
Disagree	(39)		20.7%
Strongly disagree	(16)		8.5%
Total	(188)		

Confidence: +/-6.6%   Average Score: 2.86

Correlation (-0.26) found between this question and Q29 (*When your firm approaches team member firms for whole building energy analysis, do you offer to prov...*).

10d) Not as skilled in it as I need to be.

Filter			
Strongly agree	(32)		17.0%
Agree	(69)		36.7%
Neither agree nor disagree	(27)		14.4%
Disagree	(33)		17.6%
Strongly disagree	(27)		14.4%
Total	(188)	0 10 20 30 40 50 60 70 80 90 100%	
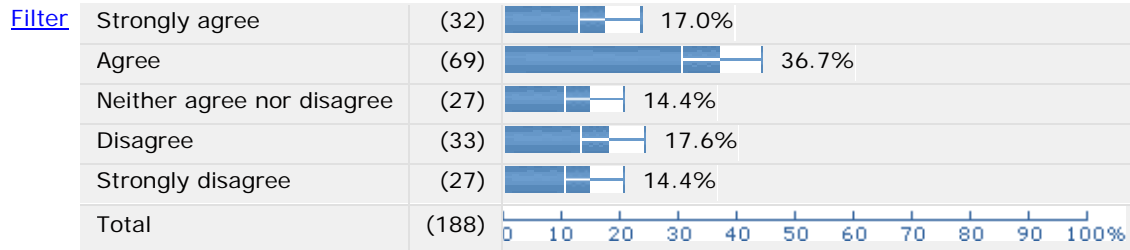
Confidence: +/-6.8%   Average Score: 2.76

Correlation (0.63) found between this question and Q11d (*If I was more skilled in using it*).

11)   Please indicate the extent to which you agree with the items that would cause you to use [Q8a] more:

This question is asked if the answer to question 9 is *between 1% to 24%* or *between 25% to 49%* or *between 50% to 74%*.

11a) If [Q10] did everything I needed I would use it all the time.

Filter			
Strongly agree	(58)		30.9%
Agree	(74)		39.4%
Neither agree nor disagree	(42)		22.3%
Disagree	(13)		6.9%
Strongly disagree	(1)		0.5%
Total	(188)	0 10 20 30 40 50 60 70 80 90 100%	
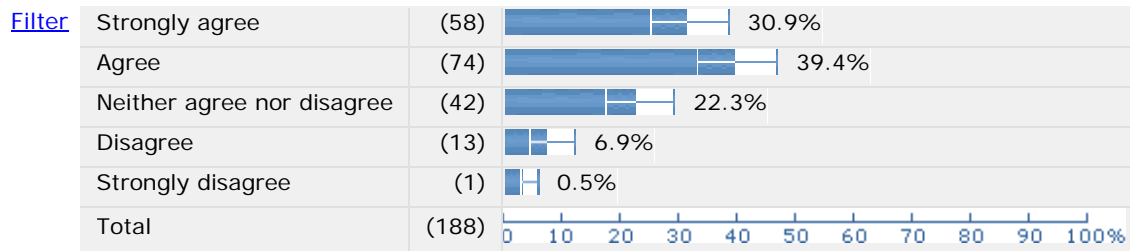
Confidence: +/-6.9%   Average Score: 2.07

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11b) If clients asked me to use it

[Filter](#)

Strongly agree	(56)		29.8%
Agree	(68)		36.2%
Neither agree nor disagree	(50)		26.6%
Disagree	(11)		5.9%
Strongly disagree	(3)		1.6%
Total	(188)	0 10 20 30 40 50 60 70 80 90 100%	
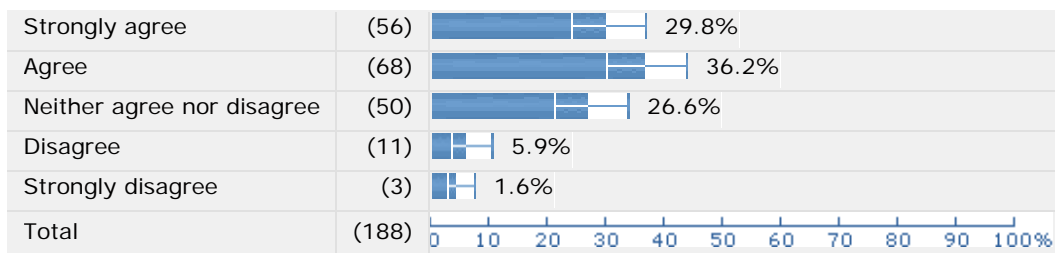
Confidence: +/-6.8%   Average Score: 2.13

Correlation (0.26) found between this question and Q10a (*Our clients want 2D-CAD(AutoCAD, DWG) files*).

Correlation (0.68) found between this question and Q11c (*If team members asked for it.*).

Correlation (0.28) found between this question and Q11d (*If I was more skilled in using it*).

11c) If team members asked for it.

[Filter](#)

Strongly agree	(45)		23.9%
Agree	(86)		45.7%
Neither agree nor disagree	(45)		23.9%
Disagree	(9)		4.8%
Strongly disagree	(3)		1.6%
Total	(188)	0 10 20 30 40 50 60 70 80 90 100%	

Confidence: +/-7.0%   Average Score: 2.14

Correlation (0.32) found between this question and Q10b (*Other team members want 2D drawings (AutoCAD, DWG)*).

Correlation (0.68) found between this question and Q11b (*If clients asked me to use it*).

Correlation (0.30) found between this question and Q11d (*If I was more skilled in using it*).

11d) If I was more skilled in using it

Filter

Strongly agree	(57)		30.3%
Agree	(63)		33.5%
Neither agree nor disagree	(39)		20.7%
Disagree	(19)		10.1%
Strongly disagree	(10)		5.3%
Total	(188)	0 10 20 30 40 50 60 70 80 90 100%	
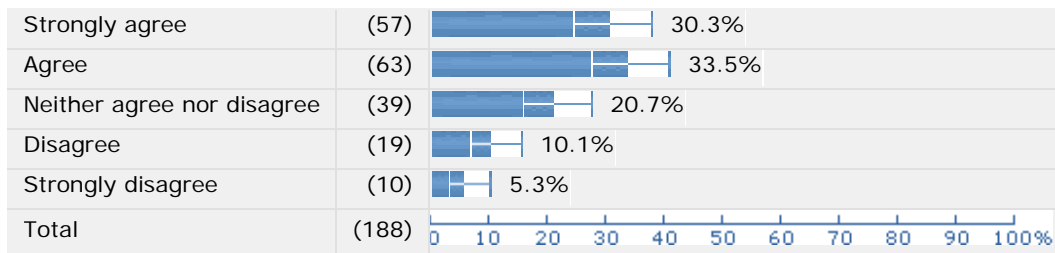
Confidence: +/-6.7%   Average Score: 2.27

Correlation (0.63) found between this question and Q10d (*Not as skilled in it as I need to be.*).

Correlation (0.28) found between this question and Q11b (*If clients asked me to use it*).

Correlation (0.30) found between this question and Q11c (*If team members asked for it.*).

12) Please indicate the extent to which you agree with the following statements on why you don't use 3D modeling or BIM tools:

This question is asked if the answer to question 8a is *Do not produce 3D Models or BIMs.*

12a) Client and/or team members require 2D drawings (AutoCAD, DWG)

Filter

Strongly agree	(53)		65.4%
Agree	(19)		23.5%
Neither agree nor disagree	(7)		8.6%
Disagree	(1)		1.2%
Strongly disagree	(1)		1.2%
Total	(81)	0 10 20 30 40 50 60 70 80 90 100%	
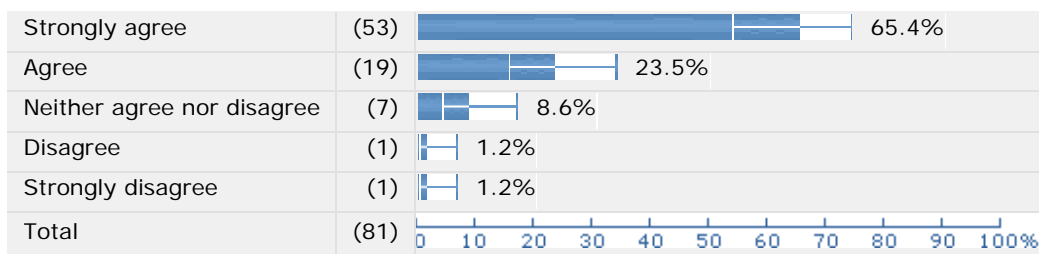
Confidence: +/-10.3%   Average Score: 1.49

Correlation (0.29) found between this question and Q12d (*They don't fit my needs*).

Correlation (-0.27) found between this question and Q13b (*I learn from a colleague that they see large productivity gains in using 3D modeling and BIM software*).

12b) Significant investment to purchase and train (learn) new tool.

Filter

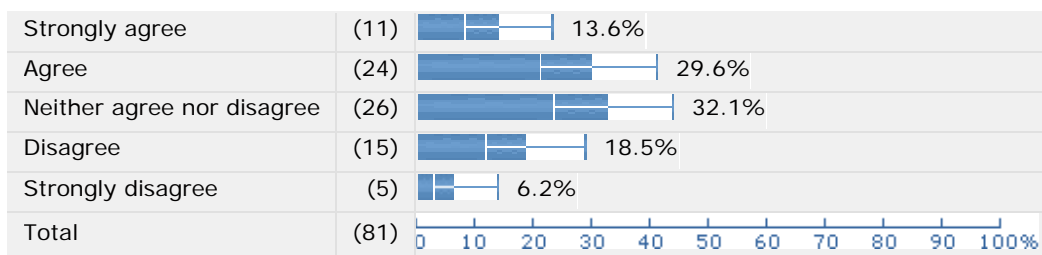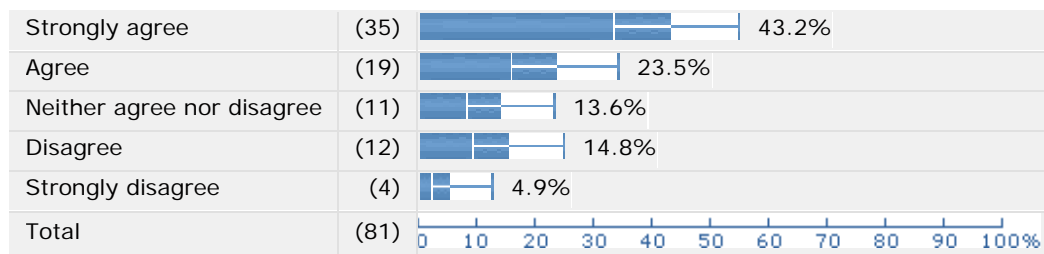|		
Strongly agree	(33)	40.7%
Agree	(26)	32.1%
Neither agree nor disagree	(16)	19.8%
Disagree	(4)	4.9%
Strongly disagree	(2)	2.5%
Total	(81)	
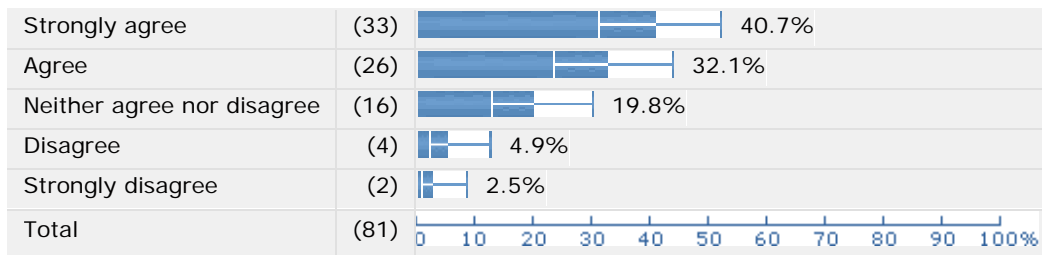
Confidence: +/-10.6%   Average Score: 1.96

Correlation (0.56) found between this question and Q12c (*Too busy to switch*).

Correlation (0.31) found between this question and Q13c (*It allows me and my team to be more productive*).

12c) Too busy to switch

Filter

Strongly agree	(11)	13.6%
Agree	(24)	29.6%
Neither agree nor disagree	(26)	32.1%
Disagree	(15)	18.5%
Strongly disagree	(5)	6.2%
Total	(81)	

Confidence: +/-10.1%   Average Score: 2.74

Correlation (0.56) found between this question and Q12b (*Significant investment to purchase and train (learn) new tool.*).

12d) They don't fit my needs

Filter

Strongly agree	(20)		24.7%
Agree	(15)		18.5%
Neither agree nor disagree	(17)		21.0%
Disagree	(25)		30.9%
Strongly disagree	(4)		4.9%
Total	(81)		
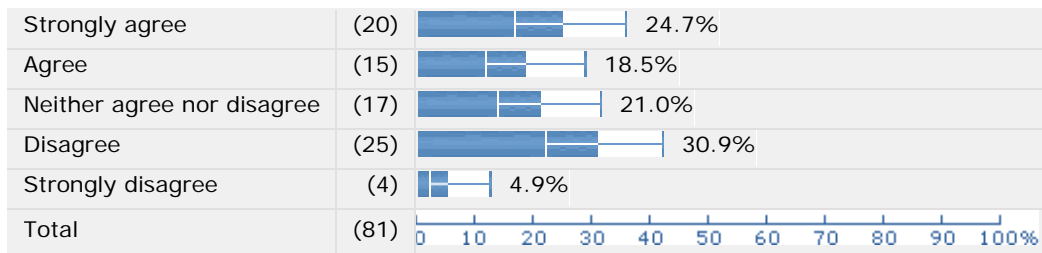
Confidence: +/-10.0%   Average Score: 2.73

Correlation (0.29) found between this question and Q12a (*Client and/or team members require 2D drawings (AutoCAD, DWG)*).

Correlation (-0.26) found between this question and Q21i (*Too much paperwork*).

13)   Please indicate the extent to which you agree with the following statements on what would cause you to do 3D modeling or BIM:

This question is asked if the answer to question 8a is *Do not produce 3D Models or BIMs*.

13a) Client requires that I use 3D modeling or BIM software

Filter

Strongly agree	(35)	43.2%
Agree	(19)	23.5%
Neither agree nor disagree	(11)	13.6%
Disagree	(12)	14.8%
Strongly disagree	(4)	4.9%
Total	(81)	

Confidence: +/-10.7%   Average Score: 2.15

Correlation (0.58) found between this question and Q13b (*I learn from a colleague that they see large productivity gains in using 3D modeling and BIM software*).
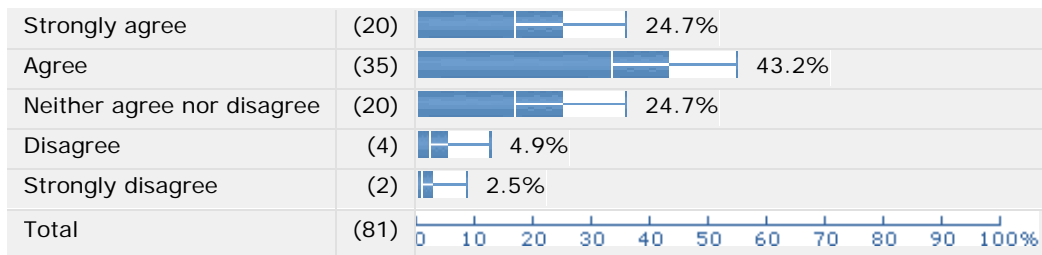
Correlation (0.42) found between this question and Q13c (*It allows me and my team to be more productive*).

Correlation (0.44) found between this question and Q13d (*Team members give me discounts for using 3D modeling and BIM tools and providing them with those mod...*).

Correlation (0.27) found between this question and Q21d (*Not comfortable with new ideas or technologies*).

Correlation (0.28) found between this question and Q21e (*Required analyses too complicated*).

Correlation (0.29) found between this question and Q21g (*Don't know*).

Correlation (-0.28) found between this question and Q21h (*Sustainable design not seen as a barrier*).

13b) I learn from a colleague that they see large productivity gains in using 3D modeling and BIM software
Filter

Strongly agree	(15)	18.5%
Agree	(31)	38.3%
Neither agree nor disagree	(27)	33.3%
Disagree	(7)	8.6%
Strongly disagree	(1)	1.2%
Total	(81)	0 10 20 30 40 50 60 70 80 90 100%
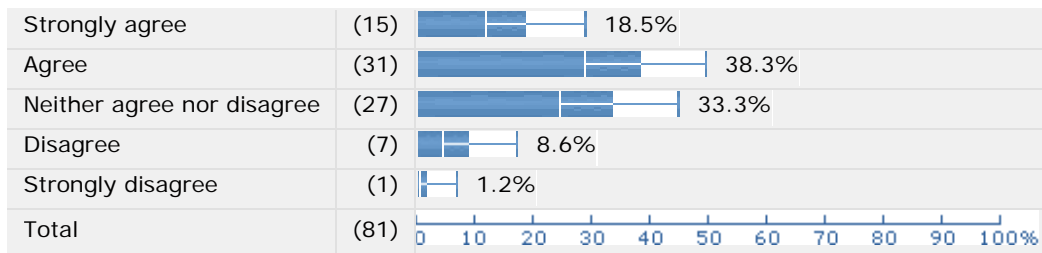
Confidence: +/-10.5%   Average Score: 2.36

Correlation (-0.27) found between this question and Q12a (*Client and/or team members require 2D drawings (AutoCAD, DWG)*).

Correlation (0.58) found between this question and Q13a (*Client requires that I use 3D modeling or BIM software*).

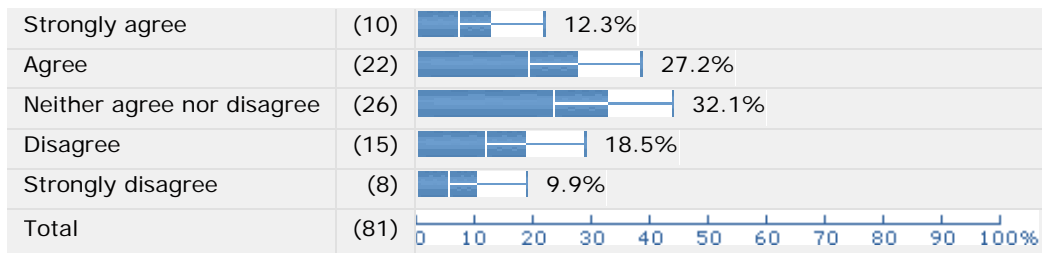Correlation (0.68) found between this question and Q13c (*It allows me and my team to be more productive*).

Correlation (0.62) found between this question and Q13d (*Team members give me discounts for using 3D modeling and BIM tools and providing them with those mod...*).

Correlation (-0.28) found between this question and Q18 (*How satisfied are you with the way you find and select building products and materials?*).

13c) It allows me and my team to be more productive

[Filter](#)

Strongly agree	(20)		24.7%
Agree	(35)		43.2%
Neither agree nor disagree	(20)		24.7%
Disagree	(4)		4.9%
Strongly disagree	(2)		2.5%
Total	(81)		0 10 20 30 40 50 60 70 80 90 100%

Confidence: +/-10.7%   Average Score: 2.17

Correlation (0.31) found between this question and Q12b (*Significant investment to purchase and train (learn) new tool.*).

Correlation (0.42) found between this question and Q13a (*Client requires that I use 3D modeling or BIM software*).

Correlation (0.68) found between this question and Q13b (*I learn from a colleague that they see large productivity gains in using 3D modeling and BIM software*).
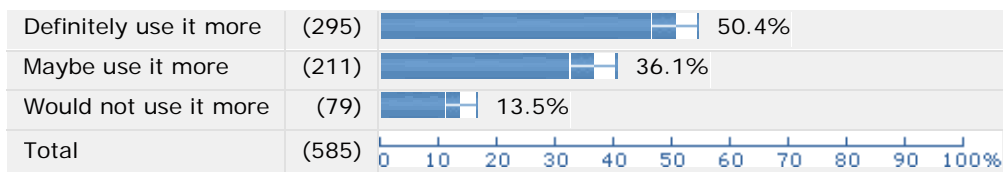
Correlation (0.60) found between this question and Q13d (*Team members give me discounts for using 3D modeling and BIM tools and providing them with those mod…*).

Correlation (-0.29) found between this question and Q18 (*How satisfied are you with the way you find and select building products and materials?*).

13d) Team members give me discounts for using 3D modeling and BIM tools and providing them with those
Filter models rather than 2D drawings.

Strongly agree	(10)		12.3%
Agree	(22)		27.2%
Neither agree nor disagree	(26)		32.1%
Disagree	(15)		18.5%
Strongly disagree	(8)		9.9%
Total	(81)	0 10 20 30 40 50 60 70 80 90 100%	

Confidence: +/-10.1%   Average Score: 2.86

Correlation (0.44) found between this question and Q13a (*Client requires that I use 3D modeling or BIM software*).

Correlation (0.62) found between this question and Q13b (*I learn from a colleague that they see large productivity gains in using 3D modeling and BIM software*).

Correlation (0.60) found between this question and Q13c (*It allows me and my team to be more productive*).

Correlation (0.26) found between this question and Q24 (*For firms doing sustainable or green building design incorporating energy, environmental, or LEED an…*).

14) What advanced features included in a 3D Modeling or BIM application would cause you to use it on the majority of projects?
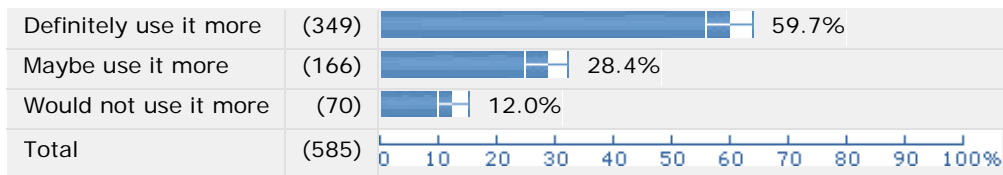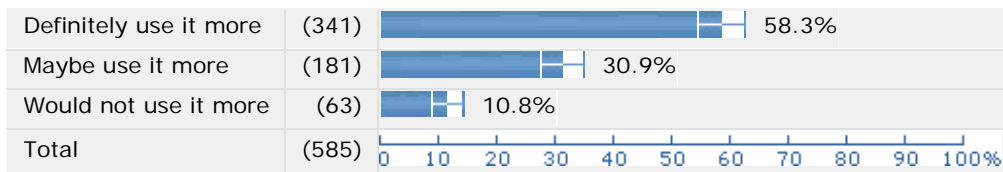
14a) Energy code compliance
Filter

Definitely use it more	(295)		50.4%
Maybe use it more	(211)		36.1%
Would not use it more	(79)		13.5%
Total	(585)	0 10 20 30 40 50 60 70 80 90 100%	

Confidence: +/-4.1%

14b) Whole building energy analysis
Filter

Definitely use it more	(349)	59.7%
Maybe use it more	(166)	28.4%
Would not use it more	(70)	12.0%
Total	(585)	

Confidence: +/-4.0%

14c) Cost estimating
Filter

Definitely use it more	(341)	58.3%
Maybe use it more	(181)	30.9%
Would not use it more	(63)	10.8%
Total	(585)	

Confidence: +/-4.0%

14d) LEED certification or green scoring
Filter

Definitely use it more	(280)	47.9%
Maybe use it more	(187)	32.0%
Would not use it more	(118)	20.2%
Total	(585)	

Confidence: +/-4.0%

GeoPraxis
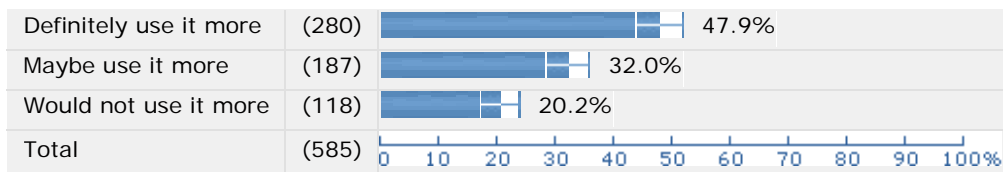
14e)   Building product and material selection

[Filter]

Definitely use it more	(266)	45.5%
Maybe use it more	(225)	38.5%
Would not use it more	(94)	16.1%
Total	(585)	
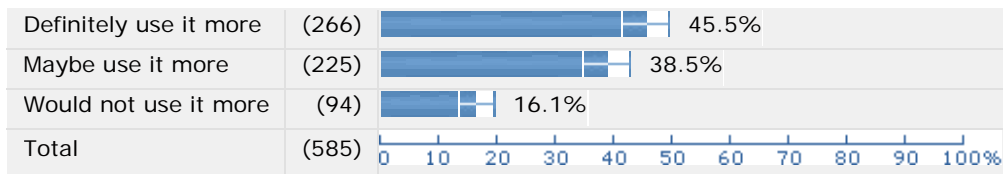
Confidence: +/-4.0%

14f)   HVAC design

[Filter]

Definitely use it more	(245)	41.9%
Maybe use it more	(187)	32.0%
Would not use it more	(153)	26.2%
Total	(585)	
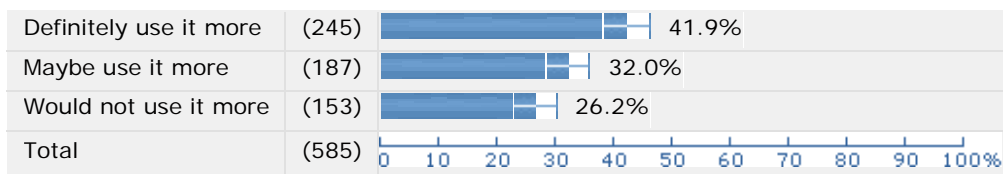
Confidence: +/-4.0%

14g)   Plumbing design

[Filter]

Definitely use it more	(202)	34.5%
Maybe use it more	(197)	33.7%
Would not use it more	(186)	31.8%
Total	(585)	
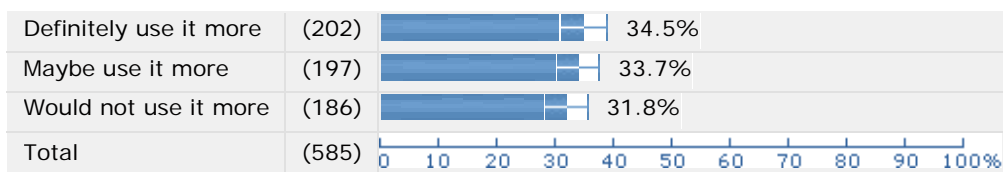
Confidence: +/-3.9%

14h) Electrical design
Filter

Definitely use it more	(196)		33.5%
Maybe use it more	(201)		34.4%
Would not use it more	(188)		32.1%
Total	(585)	0 10 20 30 40 50 60 70 80 90 100%	
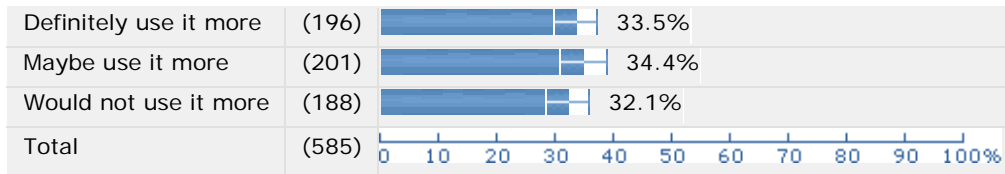
Confidence: +/-3.8%

14i) Lighting design
Filter

Definitely use it more	(285)		48.7%
Maybe use it more	(195)		33.3%
Would not use it more	(105)		17.9%
Total	(585)	0 10 20 30 40 50 60 70 80 90 100%	
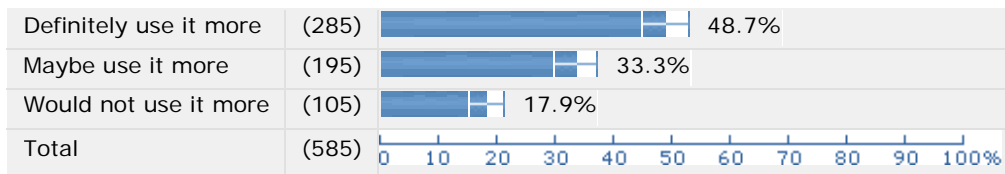
Confidence: +/-4.1%

14j) ADA code compliance
Filter

Definitely use it more	(220)		37.6%
Maybe use it more	(217)		37.1%
Would not use it more	(148)		25.3%
Total	(585)	0 10 20 30 40 50 60 70 80 90 100%	
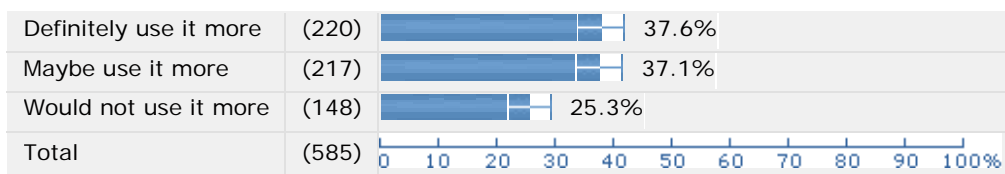
Confidence: +/-3.9%

14k)   Fire code compliance
Filter

Definitely use it more	(230)	39.3%
Maybe use it more	(208)	35.6%
Would not use it more	(147)	25.1%
Total	(585)	
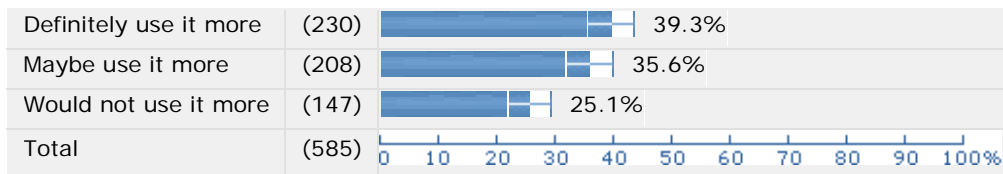
Confidence: +/-4.0%

14l)   Structural analysis
Filter

Definitely use it more	(249)	42.6%
Maybe use it more	(194)	33.2%
Would not use it more	(142)	24.3%
Total	(585)	
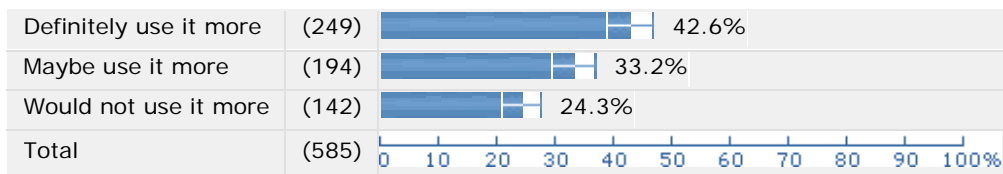
Confidence: +/-4.0%

15)   For the desired computationally intense advanced features above how would you prefer accessing them? (3D Modeling or BIM application always remains on local computer)

15a) Integrated into a 3D/BIM application that runs analyses on your computer

Filter
- Pros: Does not require Internet connection, no worry about file IO management

- Cons: Can not use computer while time intensive analyses running, intense computer requirements, user must manage updates, not all platforms and OSs supported, user distributes results to team members
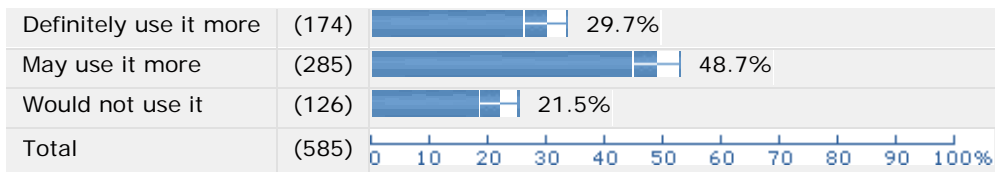
Definitely use it more	(196)		33.5%
May use it more	(293)		50.1%
Would not use it	(96)		16.4%
Total	(585)	0 10 20 30 40 50 60 70 80 90 100%	
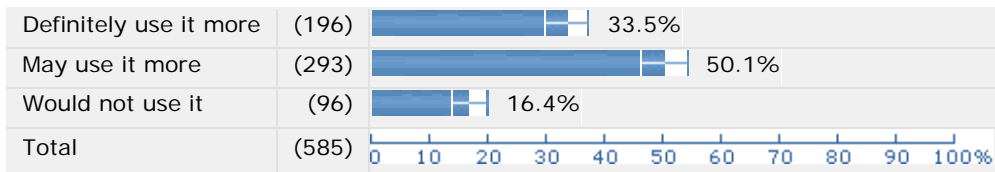
Confidence: +/-4.1%

15b) Integrated into a 3D/BIM application that runs analyses on a remote web server
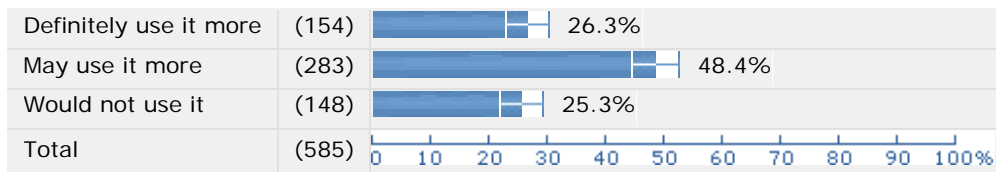
Filter
- Pros: Can continue using computer when time intensive analyses running, no additional computer requirements, up to date data used in analyses, access to enormous computing power, no worry about file IO management, independent of platform and OS, 24/7 sharing of results with team members

- Cons: requires Internet connection, dependant on outside service

Definitely use it more	(174)		29.7%
May use it more	(285)		48.7%
Would not use it	(126)		21.5%
Total	(585)	0 10 20 30 40 50 60 70 80 90 100%	

Confidence: +/-4.1%

15c) As a separate application that runs analyses on local computer and shares a standard file format with
Filter the 3D/BIM application

- Pros: Does not require Internet connection

- Cons: Can not use computer while time intensive analyses running, intense computer requirements, must manage updates, file IO management, not all platforms and OSs supported, user distributes results to team members

Definitely use it more	(154)		26.3%
May use it more	(283)		48.4%
Would not use it	(148)		25.3%
Total	(585)	0 10 20 30 40 50 60 70 80 90 100%	

Confidence: +/-4.0%

16) Do you assist in the selection of building products and materials?
Filter

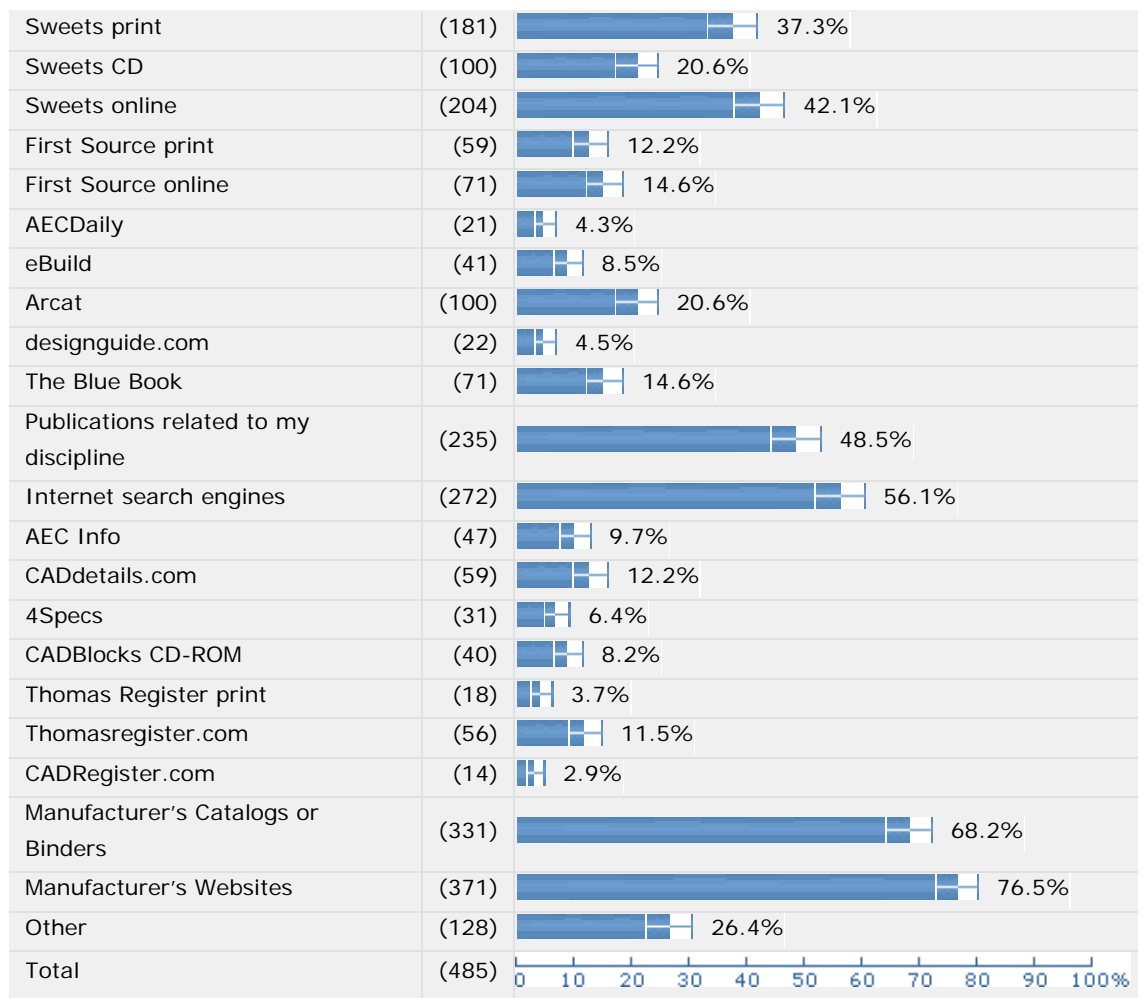|			
Yes	(485)		82.9%
No	(100)		17.1%
Total	(585)	0 10 20 30 40 50 60 70 80 90 100%	
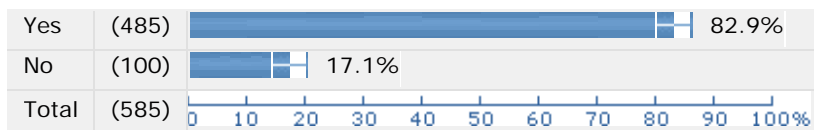
Confidence: +/-3.1%

17)   What resources do you primarily use for gathering building product and material information?

Filter

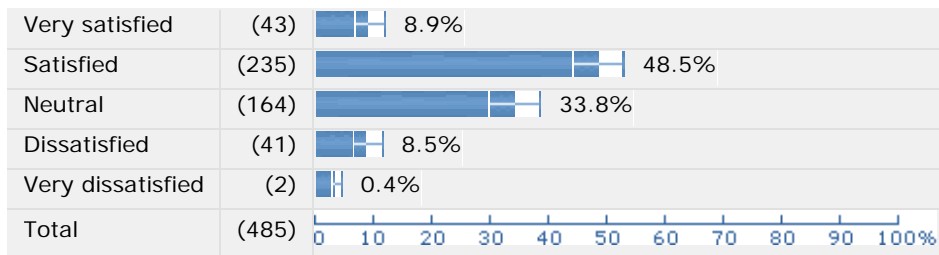|		
Sweets print	(181)	37.3%
Sweets CD	(100)	20.6%
Sweets online	(204)	42.1%
First Source print	(59)	12.2%
First Source online	(71)	14.6%
AECDaily	(21)	4.3%
eBuild	(41)	8.5%
Arcat	(100)	20.6%
designguide.com	(22)	4.5%
The Blue Book	(71)	14.6%
Publications related to my discipline	(235)	48.5%
Internet search engines	(272)	56.1%
AEC Info	(47)	9.7%
CADdetails.com	(59)	12.2%
4Specs	(31)	6.4%
CADBlocks CD-ROM	(40)	8.2%
Thomas Register print	(18)	3.7%
Thomasregister.com	(56)	11.5%
CADRegister.com	(14)	2.9%
Manufacturer's Catalogs or Binders	(331)	68.2%
Manufacturer's Websites	(371)	76.5%
Other	(128)	26.4%
Total	(485)	

Confidence: +/-4.4%

This question is asked if the answer to question 16 is *Yes.*

18)   How satisfied are you with the way you find and select building products and materials?

Filter

Very satisfied	(43)		8.9%
Satisfied	(235)		48.5%
Neutral	(164)		33.8%
Dissatisfied	(41)		8.5%
Very dissatisfied	(2)		0.4%
Total	(485)	0 10 20 30 40 50 60 70 80 90 100%	

Confidence: +/-4.4%   Average Score: 2.43

This question is asked if the answer to question 16 is *Yes*.

Correlation (-0.28) found between this question and Q13b (*I learn from a colleague that they see large productivity gains in using 3D modeling and BIM software*).

Correlation (-0.29) found between this question and Q13c (*It allows me and my team to be more productive*).

19)   What resources do you primarily use for gathering pre-drawn CAD Details?

Filter

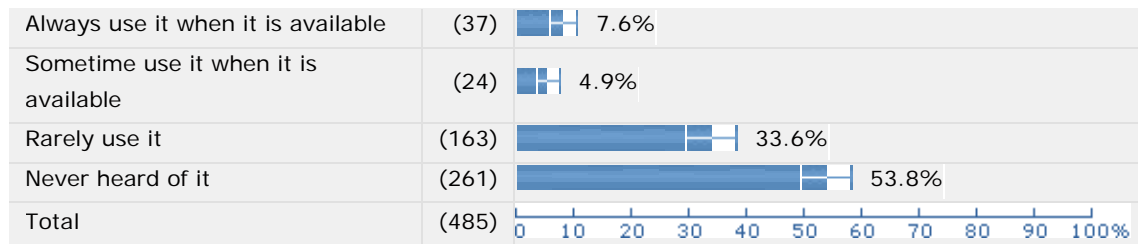| Resource	Count	Bar	Percent
Sweets CD	(48)		9.9%
Sweets online	(101)		20.8%
First Source online	(18)		3.7%
AECDaily	(7)		1.4%
eBuild	(14)		2.9%
Arcat	(28)		5.8%
designguide.com	(9)		1.9%
The Blue Book	(12)		2.5%
Internet search engines	(160)		33.0%
AEC Info	(20)		4.1%
CADdetails.com	(67)		13.8%
4Specs	(14)		2.9%
CADBlocks CD-ROM	(53)		10.9%
Thomasregister.com	(19)		3.9%
CADRegister.com	(13)		2.7%
Manufacturer's Websites	(292)		60.2%
Other	(144)		29.7%
Total	(485)		
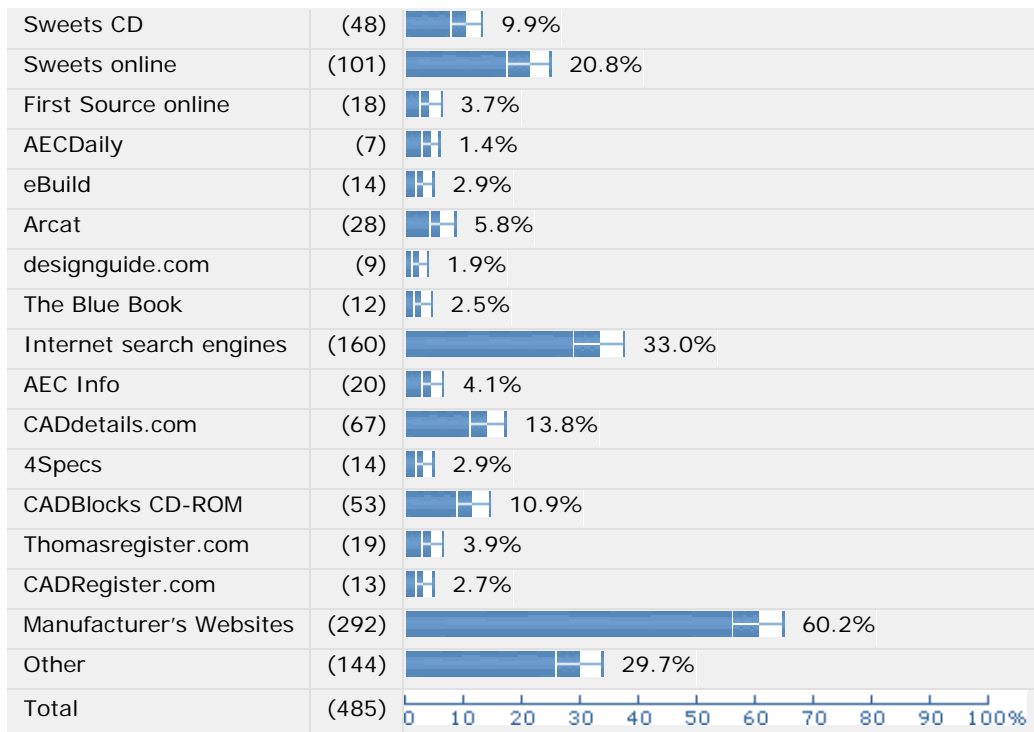
Confidence: +/-4.4%

This question is asked if the answer to question 16 is *Yes.*

20)   Which pre-drawn CAD detail technology/format do you use for including building product or materials into your drawings?

This question is asked if the answer to question 16 is *Yes*.
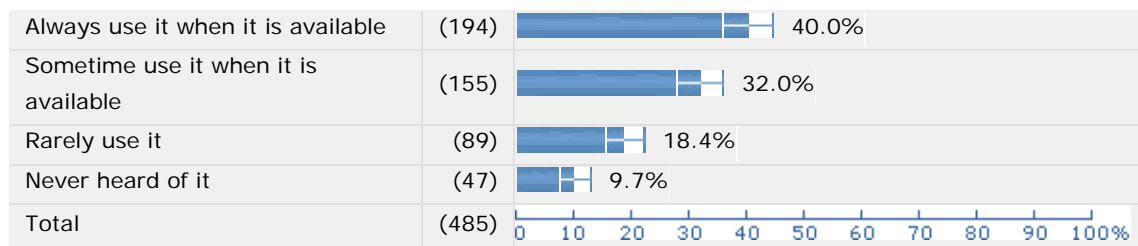
20a)   Bentley Formats (DGN, Cell, PCS)
Filter

Always use it when it is available	(37)	7.6%
Sometime use it when it is available	(24)	4.9%
Rarely use it	(163)	33.6%
Never heard of it	(261)	53.8%
Total	(485)	

Confidence: +/-4.4%

This question is asked if the answer to question 16 is *Yes*.

20b)   AutoCAD Blocks
Filter

Always use it when it is available	(194)	40.0%
Sometime use it when it is available	(155)	32.0%
Rarely use it	(89)	18.4%
Never heard of it	(47)	9.7%
Total	(485)	

Confidence: +/-4.4%

This question is asked if the answer to question 16 is *Yes*.

20c) Architectural Desktop Objects

Filter

Always use it when it is available	(101)	20.8%
Sometime use it when it is available	(92)	19.0%
Rarely use it	(178)	36.7%
Never heard of it	(114)	23.5%
Total	(485)	
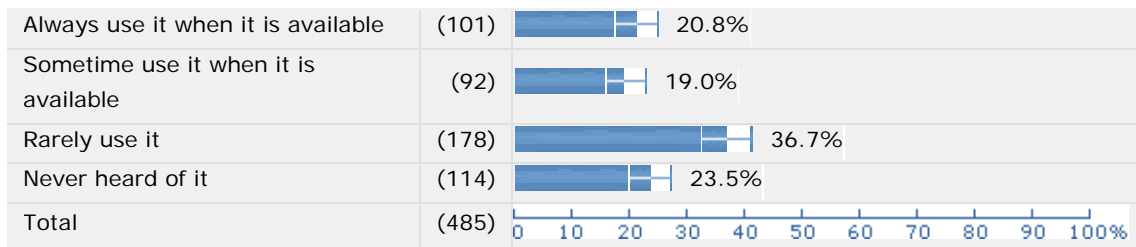
Confidence: +/-4.3%

This question is asked if the answer to question 16 is *Yes.*

20d) Autodesk Building System Objects

Filter

Always use it when it is available	(51)	10.5%
Sometime use it when it is available	(63)	13.0%
Rarely use it	(197)	40.6%
Never heard of it	(174)	35.9%
Total	(485)	
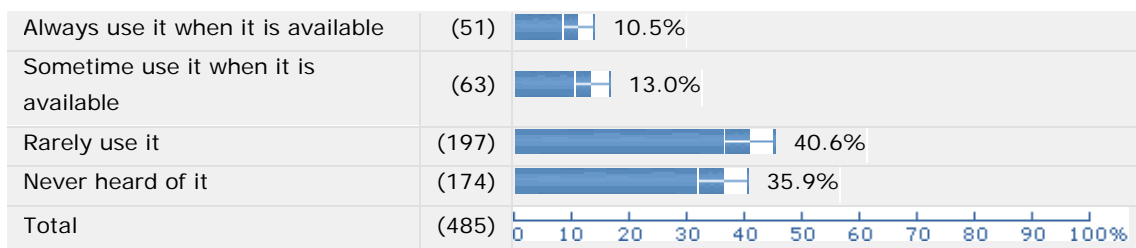
Confidence: +/-4.4%

This question is asked if the answer to question 16 is *Yes.*

20e) Revit Family Files

Filter

Always use it when it is available	(64)	13.2%
Sometime use it when it is available	(25)	5.2%
Rarely use it	(147)	30.3%
Never heard of it	(249)	51.3%
Total	(485)	
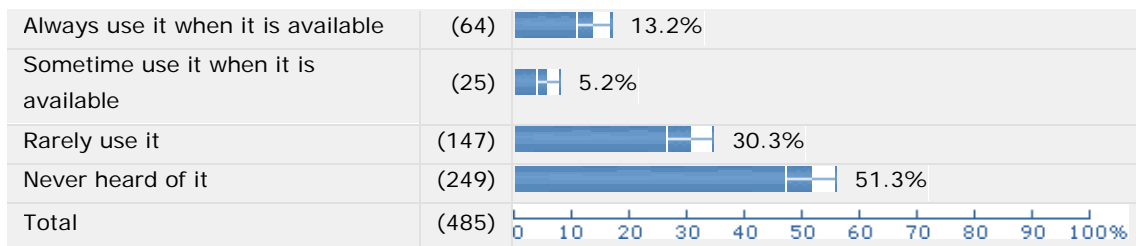
Confidence: +/-4.4%

This question is asked if the answer to question 16 is *Yes.*

20f)   Autodesk's iDrop
Filter

Always use it when it is available	(43)		8.9%
Sometime use it when it is available	(57)		11.8%
Rarely use it	(150)		30.9%
Never heard of it	(235)		48.5%
Total	(485)	0 10 20 30 40 50 60 70 80 90 100%	
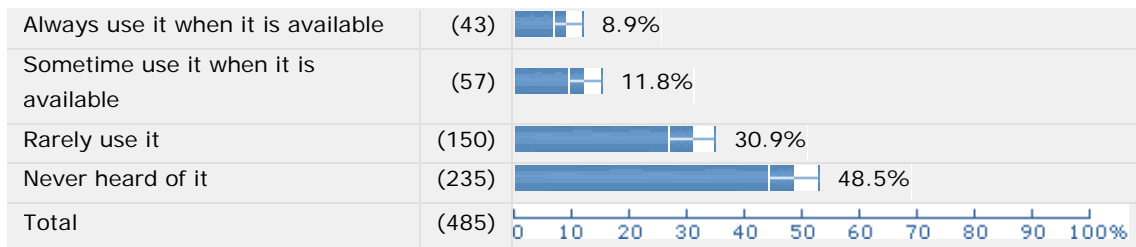
Confidence: +/-4.4%

This question is asked if the answer to question 16 is *Yes.*

20g) GDL Objects
Filter

Always use it when it is available	(96)		19.8%
Sometime use it when it is available	(35)		7.2%
Rarely use it	(122)		25.2%
Never heard of it	(232)		47.8%
Total	(485)	0 10 20 30 40 50 60 70 80 90 100%	
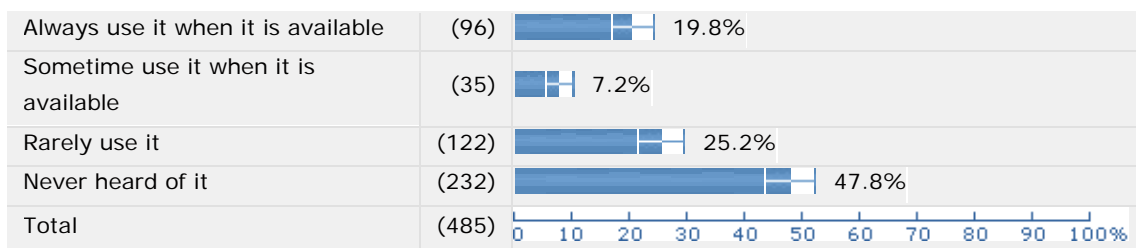
Confidence: +/-4.4%

This question is asked if the answer to question 16 is *Yes.*

20h) Adobe PDF
Filter

Always use it when it is available	(106)		21.9%
Sometime use it when it is available	(202)		41.6%
Rarely use it	(145)		29.9%
Never heard of it	(32)		6.6%
Total	(485)	0 10 20 30 40 50 60 70 80 90 100%	
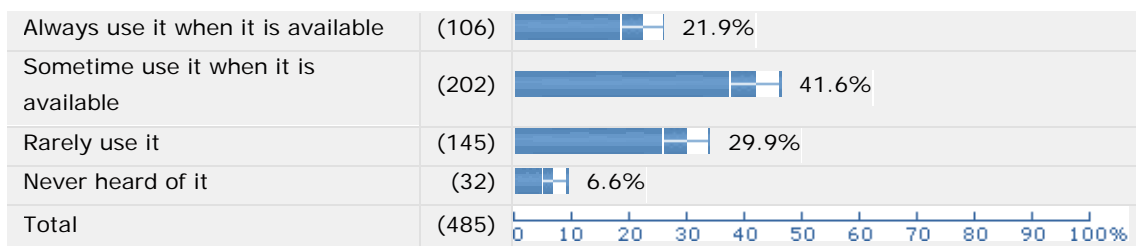
Confidence: +/-4.4%

This question is asked if the answer to question 16 is *Yes.*

21)   Please indicate the extent to which you agree with the following statements regarding implementing sustainable green building design in your practice (1=strongly Disagree, 5=strongly Agree):
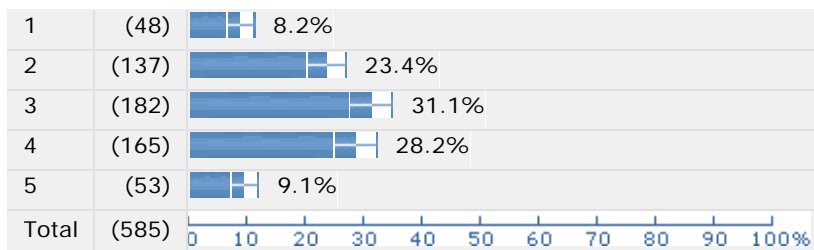
21a) Adds significantly to first costs
Filter

1	(38)		6.5%
2	(108)		18.5%
3	(242)		41.4%
4	(151)		25.8%
5	(46)		7.9%
Total	(585)	0 10 20 30 40 50 60 70 80 90 100%	
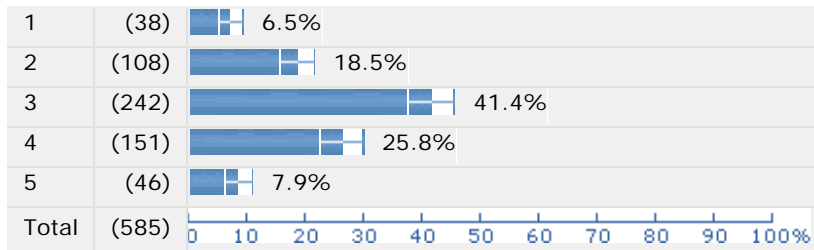
Confidence: +/-4.0%   Average Score: 3.10

Correlation (0.37) found between this question and Q21b (*Market not interested or not willing to pay premium*).

Correlation (0.33) found between this question and Q21c (*Hard to justify even on the basis of long-term savings*).

21b) Market not interested or not willing to pay premium
Filter

1	(48)		8.2%
2	(137)		23.4%
3	(182)		31.1%
4	(165)		28.2%
5	(53)		9.1%
Total	(585)	0 10 20 30 40 50 60 70 80 90 100%	

Confidence: +/-3.8%   Average Score: 3.06

Correlation (0.37) found between this question and Q21a (*Adds significantly to first costs*).

Correlation (0.43) found between this question and Q21c (*Hard to justify even on the basis of long-term savings*).

21c)   Hard to justify even on the basis of long-term savings

Filter

1	(145)	24.8%
2	(175)	29.9%
3	(159)	27.2%
4	(82)	14.0%
5	(24)	4.1%
Total	(585)	
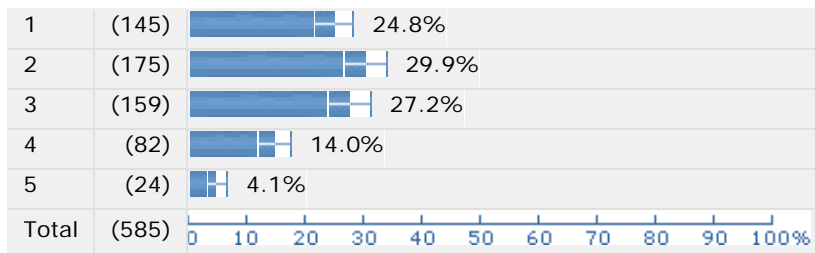
Confidence: +/-3.7%   Average Score: 2.43

Correlation (0.33) found between this question and Q21a (*Adds significantly to first costs*).

Correlation (0.43) found between this question and Q21b (*Market not interested or not willing to pay premium*).

Correlation (0.45) found between this question and Q21d (*Not comfortable with new ideas or technologies*).

Correlation (0.35) found between this question and Q21e (*Required analyses too complicated*).

Correlation (0.45) found between this question and Q21f (*Not applicable*).

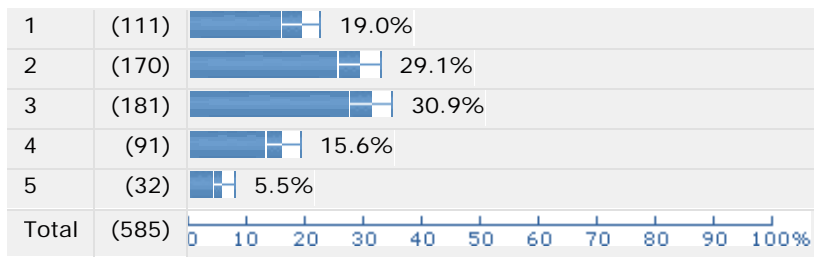Correlation (0.32) found between this question and Q21g (*Don't know*).

Correlation (0.31) found between this question and Q21i (*Too much paperwork*).

21d) Not comfortable with new ideas or technologies

Filter

1	(265)		45.3%
2	(144)		24.6%
3	(100)		17.1%
4	(48)		8.2%
5	(28)		4.8%
Total	(585)	0 10 20 30 40 50 60 70 80 90 100%	
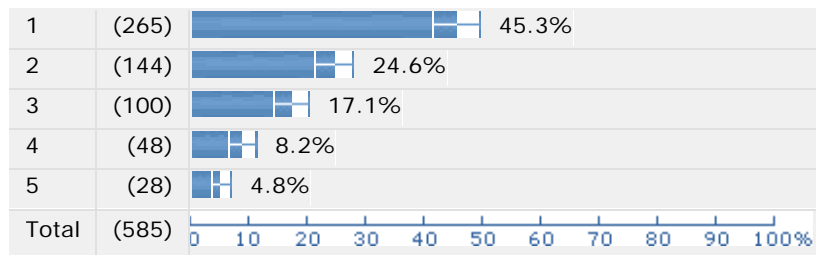
Confidence: +/-4.0%   Average Score: 2.03

Correlation (0.27) found between this question and Q13a (*Client requires that I use 3D modeling or BIM software*).

Correlation (0.45) found between this question and Q21c (*Hard to justify even on the basis of long-term savings*).

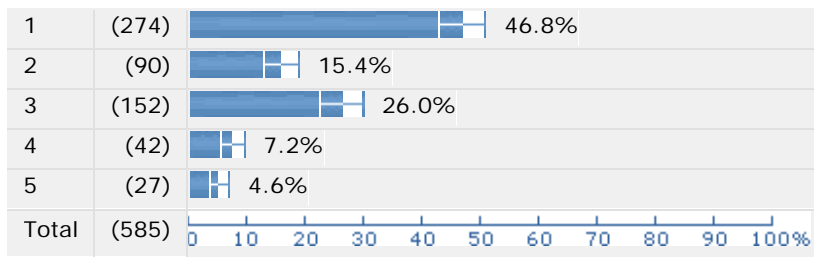Correlation (0.47) found between this question and Q21e (*Required analyses too complicated*).

Correlation (0.50) found between this question and Q21f (*Not applicable*).

Correlation (0.43) found between this question and Q21g (*Don't know*).

Correlation (-0.25) found between this question and Q21h (*Sustainable design not seen as a barrier*).

Correlation (0.30) found between this question and Q21i (*Too much paperwork*).

21e) Required analyses too complicated

[Filter](#)

1	(111)	19.0%
2	(170)	29.1%
3	(181)	30.9%
4	(91)	15.6%
5	(32)	5.5%
Total	(585)	0 10 20 30 40 50 60 70 80 90 100%

Confidence: +/-3.7%   Average Score: 2.59

Correlation (0.28) found between this question and Q13a (*Client requires that I use 3D modeling or BIM software*).

Correlation (0.35) found between this question and Q21c (*Hard to justify even on the basis of long-term savings*).

Correlation (0.47) found between this question and Q21d (*Not comfortable with new ideas or technologies*).

Correlation (0.40) found between this question and Q21f (*Not applicable*).

Correlation (0.35) found between this question and Q21g (*Don't know*).

Correlation (0.46) found between this question and Q21i (*Too much paperwork*).

21f)   Not applicable

Filter

1	(274)	46.8%
2	(90)	15.4%
3	(152)	26.0%
4	(42)	7.2%
5	(27)	4.6%
Total	(585)	0 10 20 30 40 50 60 70 80 90 100%

Confidence: +/-4.0%   Average Score: 2.07

Correlation (0.45) found between this question and Q21c (*Hard to justify even on the basis of long-term savings*).
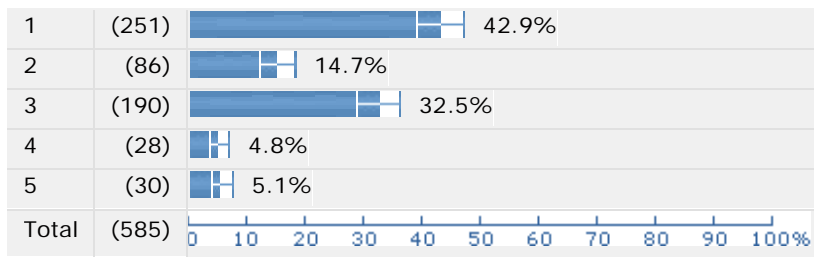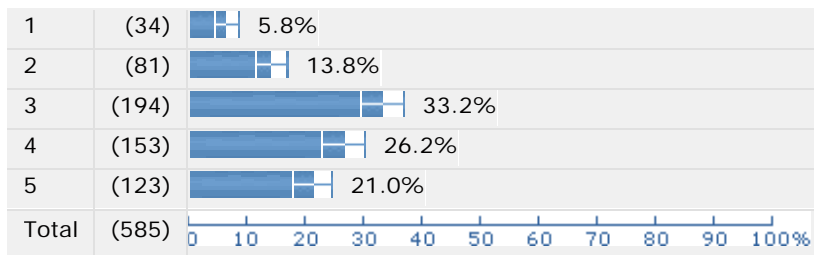
Correlation (0.50) found between this question and Q21d (*Not comfortable with new ideas or technologies*).

Correlation (0.40) found between this question and Q21e (*Required analyses too complicated*).

Correlation (0.68) found between this question and Q21g (*Don't know*).

Correlation (0.29) found between this question and Q21i (*Too much paperwork*).

GeoPraxis

21g) Don't know

Filter

1	(251)		42.9%
2	(86)		14.7%
3	(190)		32.5%
4	(28)		4.8%
5	(30)		5.1%
Total	(585)	0 10 20 30 40 50 60 70 80 90 100%	

Confidence: +/-4.0%   Average Score: 2.15

Correlation (0.29) found between this question and Q13a (*Client requires that I use 3D modeling or BIM software*).

Correlation (0.32) found between this question and Q21c (*Hard to justify even on the basis of long-term savings*).

Correlation (0.43) found between this question and Q21d (*Not comfortable with new ideas or technologies*).

Correlation (0.35) found between this question and Q21e (*Required analyses too complicated*).

Correlation (0.68) found between this question and Q21f (*Not applicable*).

Correlation (0.28) found between this question and Q21i (*Too much paperwork*).

21h) Sustainable design not seen as a barrier

Filter

1	(34)	5.8%
2	(81)	13.8%
3	(194)	33.2%
4	(153)	26.2%
5	(123)	21.0%
Total	(585)	

Confidence: +/-3.8%   Average Score: 3.43

Correlation (-0.28) found between this question and Q13a (*Client requires that I use 3D modeling or BIM software*).

Correlation (-0.25) found between this question and Q21d (*Not comfortable with new ideas or technologies*).

21i) Too much paperwork

Filter

1	(87)	14.9%
2	(150)	25.6%
3	(205)	35.0%
4	(104)	17.8%
5	(39)	6.7%
Total	(585)	
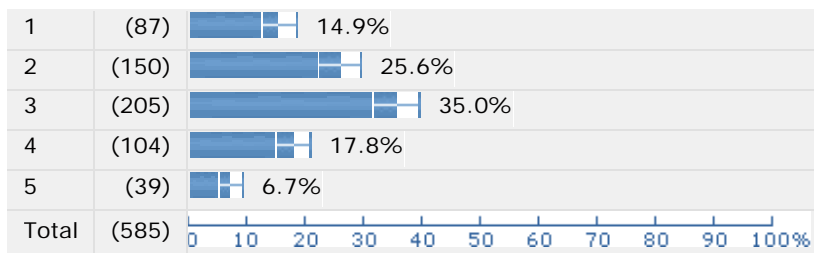
Confidence: +/-3.9%   Average Score: 2.76

Correlation (-0.26) found between this question and Q12d (*They don't fit my needs*).

Correlation (0.31) found between this question and Q21c (*Hard to justify even on the basis of long-term savings*).

Correlation (0.30) found between this question and Q21d (*Not comfortable with new ideas or technologies*).
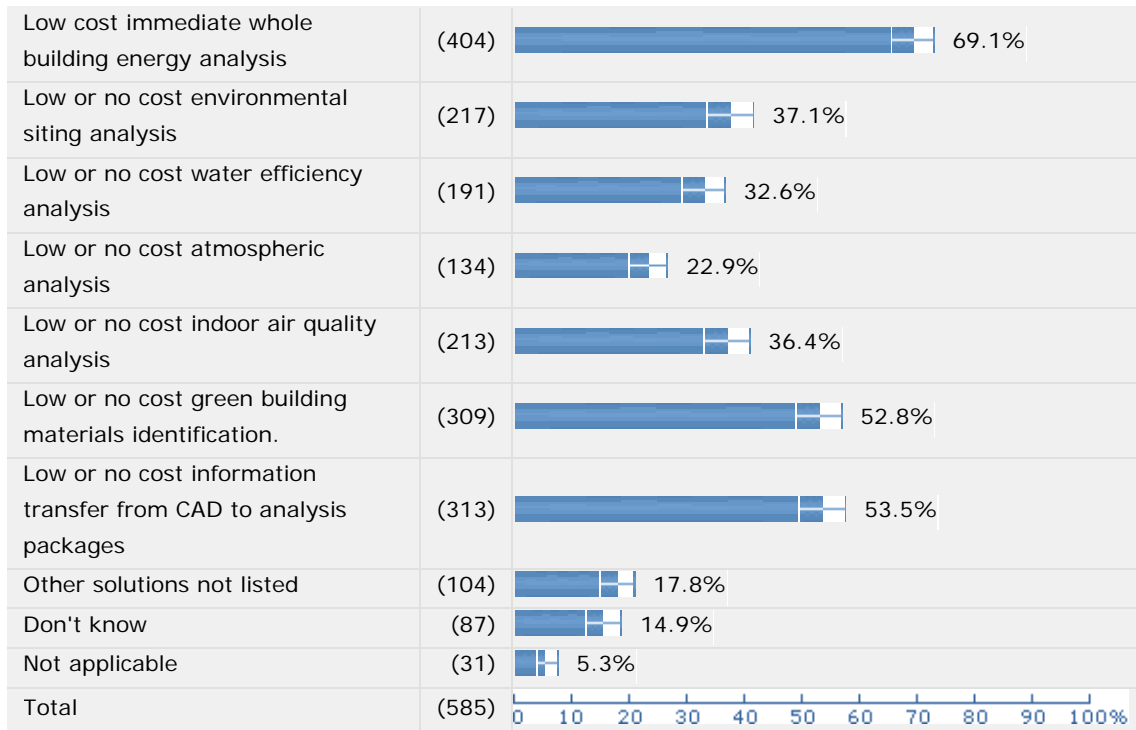
Correlation (0.46) found between this question and Q21e (*Required analyses too complicated*).

Correlation (0.29) found between this question and Q21f (*Not applicable*).

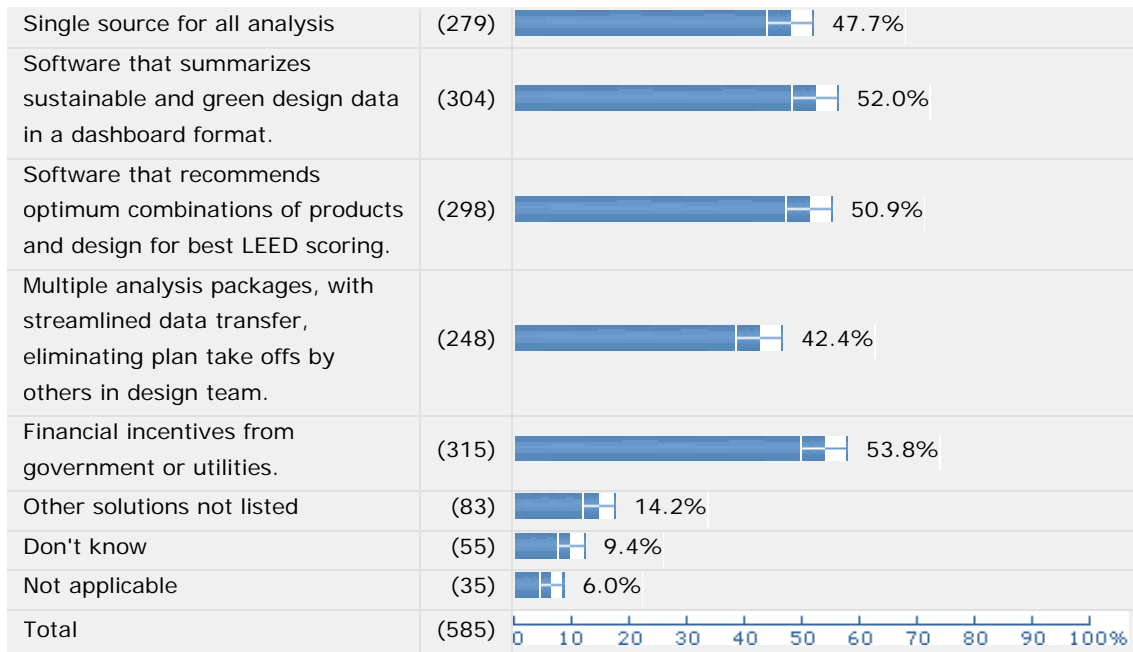Correlation (0.28) found between this question and Q21g (*Don't know*).

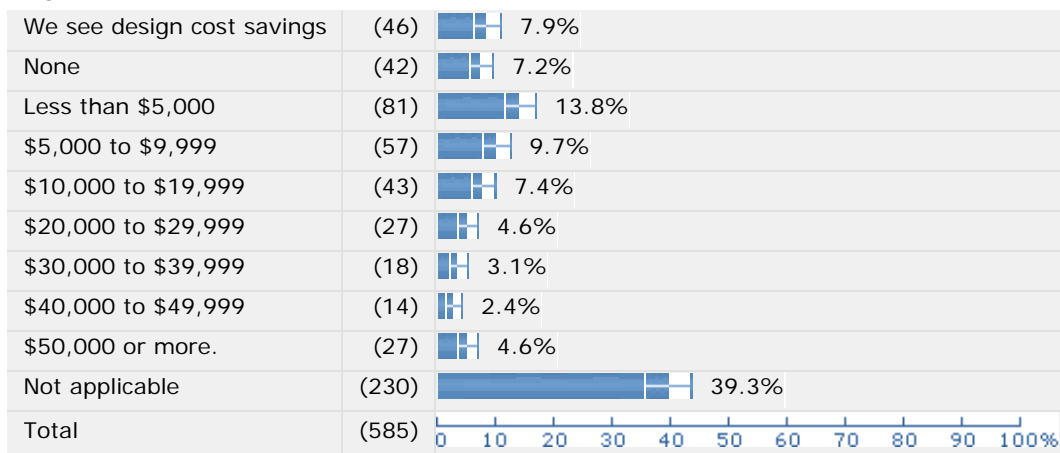22)   If cost is a barrier, which of the following would be important in driving down costs.

Filter

Low cost immediate whole building energy analysis	(404)		69.1%
Low or no cost environmental siting analysis	(217)		37.1%
Low or no cost water efficiency analysis	(191)		32.6%
Low or no cost atmospheric analysis	(134)		22.9%
Low or no cost indoor air quality analysis	(213)		36.4%
Low or no cost green building materials identification.	(309)		52.8%
Low or no cost information transfer from CAD to analysis packages	(313)		53.5%
Other solutions not listed	(104)		17.8%
Don't know	(87)		14.9%
Not applicable	(31)		5.3%
Total	(585)	0 10 20 30 40 50 60 70 80 90 100%	

Confidence: +/-4.0%

GeoPraxis

G:\Projects\PG&E\PG&E-05 EDR\web survey\GBS_Web_Survey2004_PG&E_Final_Report.doc

23) If complexity is a barrier, which of the following would help your firm adopt green building design
Filter practices

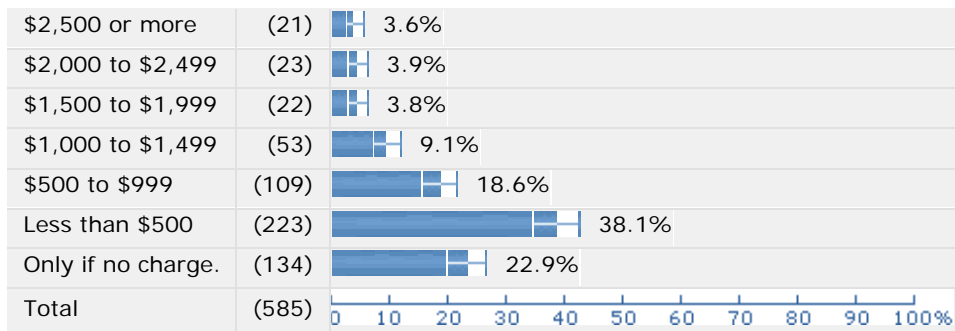|		
Single source for all analysis	(279)	47.7%
Software that summarizes sustainable and green design data in a dashboard format.	(304)	52.0%
Software that recommends optimum combinations of products and design for best LEED scoring.	(298)	50.9%
Multiple analysis packages, with streamlined data transfer, eliminating plan take offs by others in design team.	(248)	42.4%
Financial incentives from government or utilities.	(315)	53.8%
Other solutions not listed	(83)	14.2%
Don't know	(55)	9.4%
Not applicable	(35)	6.0%
Total	(585)	

Confidence: +/-4.1%

24) For firms doing sustainable or green building design incorporating energy, environmental, or LEED
Filter analysis, what are the typical **design costs** added to the project during design and specification
stages?

We see design cost savings	(46)	7.9%
None	(42)	7.2%
Less than $5,000	(81)	13.8%
$5,000 to $9,999	(57)	9.7%
$10,000 to $19,999	(43)	7.4%
$20,000 to $29,999	(27)	4.6%
$30,000 to $39,999	(18)	3.1%
$40,000 to $49,999	(14)	2.4%
$50,000 or more.	(27)	4.6%
Not applicable	(230)	39.3%
Total	(585)	

Confidence: +/-4.0%   Average Score: 6.43

Correlation (0.26) found between this question and Q13d (*Team members give me discounts for using 3D modeling and BIM tools and providing them with those mod...*).
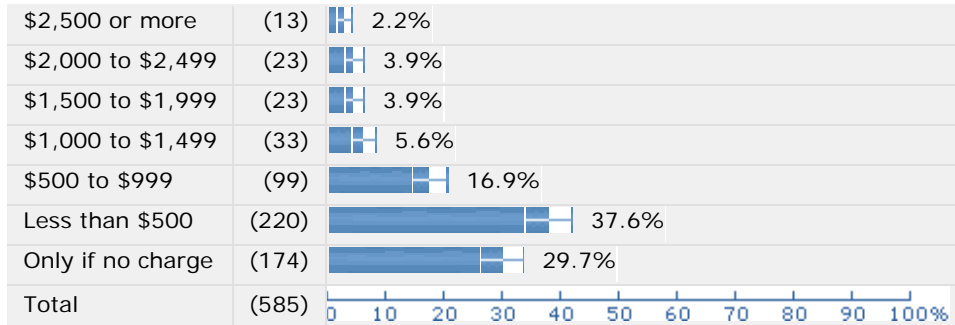
25)   If easy to use software were available to provide immediate whole building energy analysis, based on
Filter early schematic building model information, what would you be willing to pay per project?

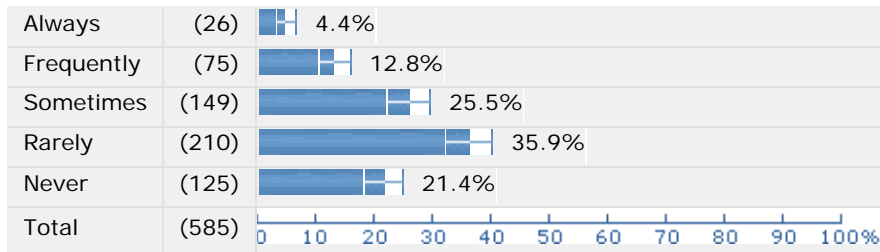|		
$2,500 or more	(21)	3.6%
$2,000 to $2,499	(23)	3.9%
$1,500 to $1,999	(22)	3.8%
$1,000 to $1,499	(53)	9.1%
$500 to $999	(109)	18.6%
Less than $500	(223)	38.1%
Only if no charge.	(134)	22.9%
Total	(585)	

Confidence: +/-3.9%   Average Score: 5.41

Strong correlation (0.80) found between this question and Q26 (*If easy to use software were available to provide immediate environmental and LEED scoring, based on...*).

26)   If easy to use software were available to provide immediate environmental and LEED scoring, based
Filter on early schematic building model information, what would you be willing to pay per project?

$2,500 or more	(13)	2.2%
$2,000 to $2,499	(23)	3.9%
$1,500 to $1,999	(23)	3.9%
$1,000 to $1,499	(33)	5.6%
$500 to $999	(99)	16.9%
Less than $500	(220)	37.6%
Only if no charge	(174)	29.7%
Total	(585)	

Confidence: +/-3.9%   Average Score: 5.63

Strong correlation (0.80) found between this question and Q25 (*If easy to use software were available to provide immediate whole building energy analysis, based on...*).
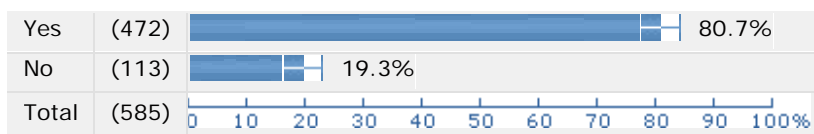
Correlation (-0.27) found between this question and Q30 (*When your firm responds to requests for analyses or engineering design, do you request information i...*).

GeoPraxis

27)   How often do your projects have whole building energy analyses completed? (*Do not include energy*
Filter *code compliance as whole building energy analyses.*)

Always	(26)	4.4%
Frequently	(75)	12.8%
Sometimes	(149)	25.5%
Rarely	(210)	35.9%
Never	(125)	21.4%
Total	(585)	

Confidence: +/-3.9%

28)   Did you know most 3D modeling or BIM software supports exporting to 2D plans?
Filter

Yes	(472)	80.7%
No	(113)	19.3%
Total	(585)	

Confidence: +/-3.2%

Correlation (0.28) found between this question and Q29 (*When your firm approaches team member firms for whole building energy analysis, do you offer to prov...*).

Correlation (0.31) found between this question and Q30 (*When your firm responds to requests for analyses or engineering design, do you request information i...*).

29) When your firm approaches team member firms for whole building energy analysis, do you offer to
Filter provide information in 3D-CAD or BIM formats?

|			
Yes	(188)		44.9%
No	(231)		55.1%
Total	(419)	0 10 20 30 40 50 60 70 80 90 100%	
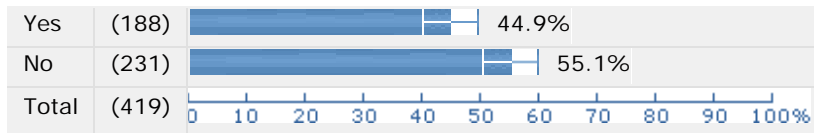
Confidence: +/-4.8%

This question is asked if the answer to question 2a is *Architect* or *Developer or Developer's Agent/Assistant* or *Designer* or *Energy Analyst*.

Correlation (-0.30) found between this question and Q10b (*Other team members want 2D drawings (AutoCAD, DWG)*).

Correlation (-0.26) found between this question and Q10c (*[Q10] does not do everything I need it to do*).

Correlation (0.28) found between this question and Q28 (*Did you know most 3D modeling or BIM software supports exporting to 2D plans?*).

30) When your firm responds to requests for analyses or engineering design, do you request information
Filter in 3D-CAD or BIM formats?

Yes	(11)		21.2%
No	(41)		78.8%
Total	(52)	0 10 20 30 40 50 60 70 80 90 100%	
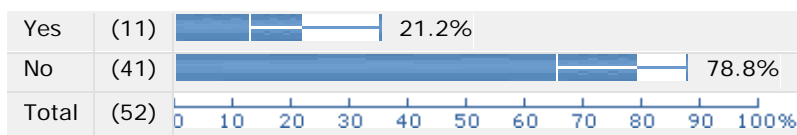
Confidence: +/-11.1%

This question is asked if the answer to question 2a is *NonStructural Engineer* or *Structural Engineer* or *Energy Code Compliance Specialist*.
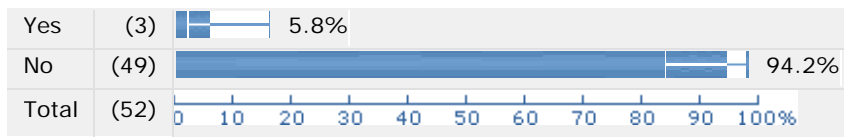
Correlation (-0.27) found between this question and Q26 (*If easy to use software were available to provide immediate environmental and LEED scoring, based on…*).

Correlation (0.31) found between this question and Q28 (*Did you know most 3D modeling or BIM software supports exporting to 2D plans?*).

Correlation (0.28) found between this question and Q31 (*Does your firm offer discounts to Architects to supply building plans in 3D-CAD or BIM formats?*).

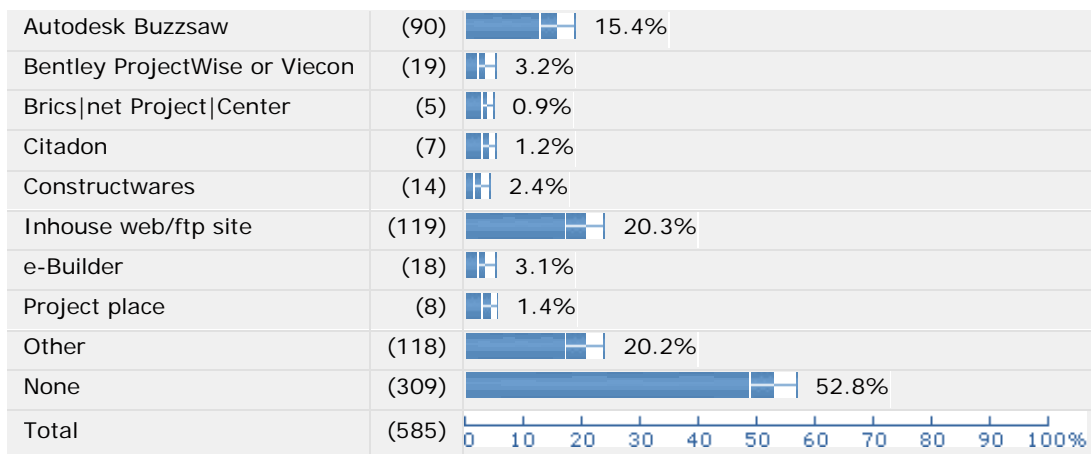31)   Does your firm offer discounts to Architects to supply building plans in 3D-CAD or BIM formats?
Filter

Yes	(3)		5.8%
No	(49)		94.2%
Total	(52)		

Confidence: +/-6.9%

This question is asked if the answer to question 2a is *NonStructural Engineer* or *Structural Engineer* or *Energy Code Compliance Specialist*.

Correlation (0.28) found between this question and Q30 (*When your firm responds to requests for analyses or engineering design, do you request information i…*).

32)   Which project portals do you or your firm use?
Filter

Autodesk Buzzsaw	(90)		15.4%
Bentley ProjectWise or Viecon	(19)		3.2%
Brics|net Project|Center	(5)		0.9%
Citadon	(7)		1.2%
Constructwares	(14)		2.4%
Inhouse web/ftp site	(119)		20.3%
e-Builder	(18)		3.1%
Project place	(8)		1.4%
Other	(118)		20.2%
None	(309)		52.8%
Total	(585)		

Confidence: +/-4.0%

33)   Please enter your contact information below. This information will remain confidential, and we need
        know how to get in touch with you in case you are a grand prize winner of an Apple iPod mini.

33a) Name:
[Show](#) *Answers not displayed.*

        E-mail:
33b) *Answers not displayed.*
[Show](#)
33c) Phone:
[Show](#) *Answers not displayed.*

33d) Company:
[Show](#) *Answers not displayed.*

33e) Address:
[Show](#) *Answers not displayed.*

        An answer to this question is not required and 0 of 0 respondents chose not to answer.
33f)
[Show](#) *Answers not displayed.*
        An answer to this question is not required and 0 of 0 respondents chose not to answer.
        City:
33g) *Answers not displayed.*
[Show](#)
        An answer to this question is not required and 0 of 0 respondents chose not to answer.
        State/Province:
33h) *Answers not displayed.*
[Show](#)
        An answer to this question is not required and 0 of 0 respondents chose not to answer.
   Zip/Postal Code:
33i)
[Show](#)
        Answers not displayed.

33j)　Country:

Filter

United States	(453)
Algeria	(1)
Argentina	(2)
Australia	(26)
Belgium	(2)
Canada	(30)
Cayman Islands	(2)
Chile	(2)
China	(2)
Denmark	(2)
Egypt	(1)
Finland	(1)
France	(2)
Germany	(3)
Greece	(1)
Hong Kong	(1)
Hungary	(2)
India	(5)
Ireland	(1)
Israel	(1)
Italy	(5)
Malaysia	(1)
Nepal	(1)
Netherlands	(2)
New Zealand	(7)
Norway	(1)
Poland	(1)
Portugal	(1)
Saudi Arabia	(1)
South Africa	(1)
Sweden	(2)
Tunisia	(0)
Turkey	(1)
United Kingdom	(20)
Viet Nam	(1)
Total	(585)

34)   Please select the color of the Apple iPod mini you would like if you won. (The link above displays the Filter iPod minis in the colors below.)

Silver	(315)	53.8%
Gold	(35)	6.0%
Blue	(133)	22.7%
Pink	(10)	1.7%
Green	(92)	15.7%
Total	(585)	
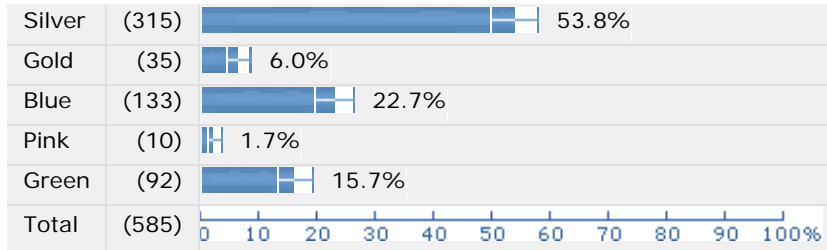
Confidence: +/-4.0%

iv)

Thank you for taking the time to make your job easier with better designed tools for tomorrow. If you are interested in immediate energy results for your building design project checkout the Green Building Studio today.

v)   We're sorry, but we are only allowing people who somehow assist in the design of buildings to take this survey.

This question is asked if the answer to question 1 is *No.*

NOTES

BAR GRAPH CONFIDENCE INTERVALS

The bar graphs presented in the Results Analysis section include 95% confidence intervals to illustrate the degree of precision available in your results. For example, in the following graph 54.2% (160/295) of the respondents indicated they will vote Democrat vs. 45.8% (135/295) Republican.
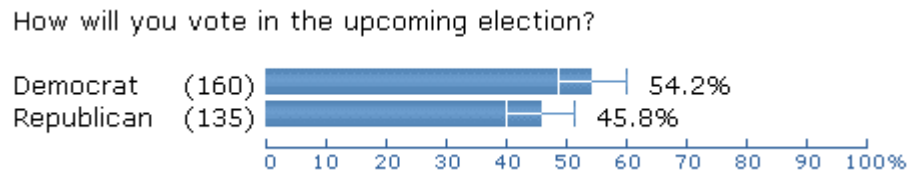
However, because the survey is based on the results of only 295 respondents, the actual percent of people who will vote Democrat could be somewhat higher or lower than 54.2%. Confidence intervals tell you how much higher or lower the percent could be. The I-bar show and the tip of each bar illustrates the spread between the lowest and highest value you are likely to see if you were to survey the entire population. In the example above, you can be 95% certain that the actual percent of people who will vote Democrat will be between 48% and 60%. Furthermore, somewhere between 40% and 52% of people will vote Republican. As you increase the number of respondents the range of uncertainty shrinks.

CONFIDENCE

Each bar graph group is followed by the text "Confidence:" and a percentage. This number is the largest confidence interval found on any of the bars in the group and can be used as a summary measure of precision. The more precise, non-symmetrical confidence intervals are illustrated separately on each bar.

AVERAGE SCORE

Some bar graph groups are followed by the text "Average Score:" and a number that represents the weighted average of all options chosen by the respondents. For example, if you asked respondents to rate their satisfaction on a scale including *Very satisfied, Satisfied, Neutral, Dissatisfied*, and *Very dissatisfied* and half responded *Very satisfied* and half responded *Satisfied*, the average score would be 1.5--half chose the first option (score=1) and half chose the second option (score=2), so the average score is 1.5.

CORRELATION

The answers to two questions are correlated when they tend to move together. For example, if you ask respondents to rate their overall satisfaction with your company and also ask if they are likely to purchase from your company again, the answers to these questions will probably show a strong correlation. That is, when satisfaction is high, the likelihood of repeat purchase is high. This is a positive correlation. Some question pairs have negative correlation. For example, the time a person spends on hold when calling for support usually has a negative correlation with overall satisfaction. Correlation is presented as a number from -1 to 1 where -1 is perfect negative correlation, 0 is no correlation, and 1 is perfect positive correlation.

When a statistically significant correlation between the answers of any two questions is found the report will include a note highlighting the correlation. This information can be used to gain insight into what factors drive key measures such as overall satisfaction.