

# The 2007 Autodesk/AIA Green Index



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StrategyOne  
200 E. Randolph St.  
Floor 63  
Chicago, IL 60601  
312.233.1318

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**The Autodesk/AIA Green Index Architect Profile**

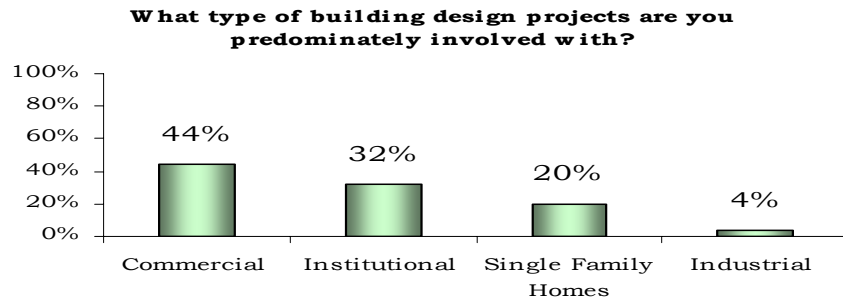
**The Autodesk/AIA 2007 Green Index reports on the practices and processes architects use that support the design of sustainable buildings.**

Autodesk has long been interested in the application of sustainable building design practices. Autodesk building information modeling (BIM) solutions, such as the Revit platform, support and interface with many of the practices and processes used by architects and engineers in the design of green buildings that respect the environment, conserve energy, and control costs. Autodesk and the AIA commissioned this research to better understand what has been happening and what is likely to happen in the future with the practice of designing green buildings.

Research Methods
The 2007 Autodesk/AIA Green Index is an online survey of 347 practicing architects. The sample came from members of the American Institute of Architects (AIA).
Architects completed the survey from October 4 to October 24, 2007.

**Architects participating in the Autodesk/AIA Green Index come from a mix of design projects.**

The population with the greatest representation was that of commercial architects (44%). However architects from institutional projects (32%), single family projects (20%) and industrial projects (4%) were also included.



The number of projects the architects have been involved in greatly varies as well. While 35% were involved in less than 4 projects, 46% were involved in up to 14 projects and 18% were involved in 15 or more projects within the past year.

The majority of architects included in the survey are employed at large firms, with 29% working at firms with 100 architects or more. However, sole practitioners were also represented (16%)

The majority of the architects surveyed for the Autodesk/AIA Green Index have fifteen or more years of experience as an architect (62%).

Architects participating live in 42 states and the District of Columbia.

Additionally, 90% of architects report that their firm is using Computer Assisted Design systems (CAD) and 44% are using Building Information Modeling (BIM).

## Executive Summary

### *Architects & Global Climate Change*

- Architects recognize the impact of human involvement on global climate change.
- Architects are taking personal responsibility for the effects placed on the environment and are working toward change.
- Beyond personal responsibility, architects believe the profession, as a whole, is heading in the right direction.

### *Client Interests in Green Building*

- Client demand is the primary influencer pushing architects to build green.
- Architects believe client interest in green building, which continues to grow, is being driven in majority by the reduced operating costs associated with sustainable design.
- However, architects also highlight an opportunity to increase client implementation of green designs.

### *Green Design Practices*

- Architects recognize the importance of green design features and processes, as they help them to meet client demands.
- Architects are making significant strides to meet client demands—most frequently through the use of *high efficiency HVAC systems*. Additionally, architects are using *retention basins for storm-water runoff* and *maximization of interior solar lighting*.
- Utilizing the design process to reduce building energy consumption also includes an increased reliance on design software.
- Additionally, architects are consulting civil engineers and obtaining additional training to ensure green practices are being implemented.
- Architects across all practice types are moving forward in the adoption of green design practices, and are predicted to continue this adoption in the future.

### *Moving Toward AIA Goals*

- Most architects believe that the personal design work they do will support the AIA goal of reducing building and construction related fossil-fuel usage.
- Additionally, architects believe that the industry will make significant progress toward the 2010 goal.

**1. Architect Attitudes and Behaviors Toward Global Climate Change**

**Architects recognize the impact of human involvement on global climate change.**

Nearly three-fourths of architects (74%) surveyed acknowledge that global climate change is occurring and is the result of human involvement.

Additionally, more than two-thirds of architects (67%) agree that practicing sustainable design is one possible answer to the issue of global warming/climate change.

**Architects are taking personal responsibility for the effects placed on the environment and are working toward change.**

Nearly nine in ten architects (86%) agree *architects should practice sustainable design whenever possible*. Further, over half of architects (54%) agree *I am responsible for developing and implementing solutions to the issue*.

To help make steps in the right direction, nearly half of architects (46%) agree *I am typically the one to initiate the conversation about making buildings environmentally friendly to clients*.

**Beyond personal responsibility, architects believe the profession, as a whole, is heading in the right direction.**

Over two-thirds of architects (67%) agree that *when thinking about architecture and the environment I feel the profession is headed in the right direction*.

Additionally, approximately half of architects (49%) agree that their *organization is starting to implement standard operating procedures to inform clients on “building green”*. One-quarter of architects (25%) report that their organizations have even *produced educational brochure/package on “building green” for clients*.

Of note, 10% of architects surveyed are currently measuring their carbon footprint on projects.

<b>Architects and Green Initiatives</b>	
<i>To what extent do you agree with the following statements, where 5 is strongly agree and 1 is strongly disagree...</i>	
<b>Top 2 Box Ratings of 4 or 5</b>	
Architects should practice sustainable design whenever possible	86
Overall, when thinking about architecture and the environment, I feel the profession is headed in the right direction.	67
Practicing sustainable design is one possible answer to the issue of global warming/climate change.	67
Architects are responsible for developing and implementing solution to the issue of climate change.	54
My organization is starting to implement standard operating procedures to inform clients on “building green”	49
I am typically the one to initiate the conversation about making buildings environmental friendly to clients	46
My organization has produced an educational brochure/package on “building green” for clients	25

**2. Factors Affecting Green Design Practices**

**Client demand is the primary influencer pushing architects to build green.**

Seven in ten architects (70%) cite *client demand* as the primary influence on their likelihood to design green buildings. Also gaining importance is *personal sense of environmental responsibility*, with over one-third of architects (35%) stating it as a reason to increase the extent of green building practices and procedures.

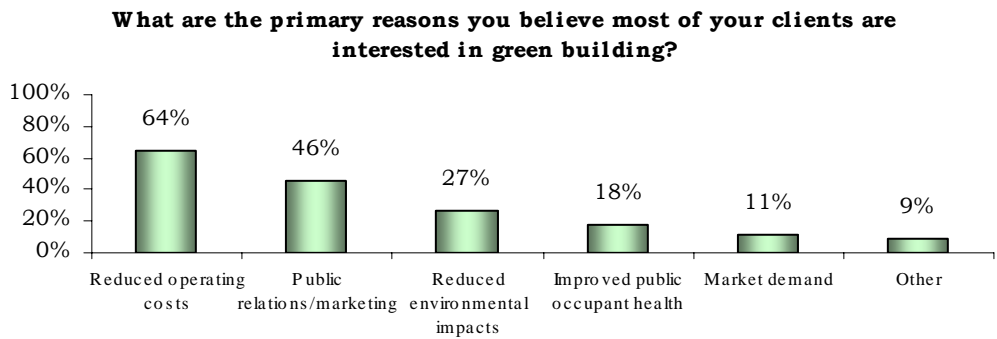
**Leading Factors Influencing Adoption of Green Building Practices**

*Each of the following factors could influence your likelihood to design green buildings. From your perspective, which three are most likely to increase the extent of your green building practices and procedures?*

%	2007
Client demand	70
Regulatory requirements	59
Rising energy costs	57
Government/industry incentives	38
Personal sense of environmental responsibility	35
Long-Term Return on Investment	30

**Architects believe client interest in green building, which continues to grow, is being driven by the reduced operating costs associated with sustainable design.**

Approximately two-thirds of architects (64%) cite *reduced operating costs* as the primary reason why their clients are interested in green building.

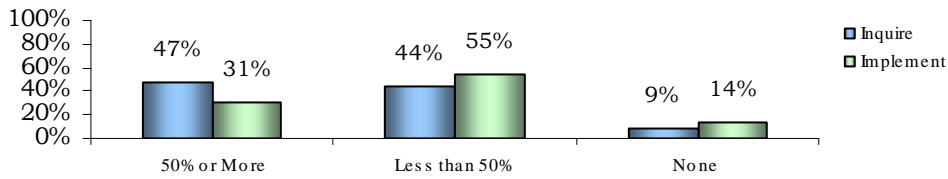


**Architects highlight an opportunity to increase client implementation of green designs.**

While nearly half of architects (47%) say their clients are inquiring about green design specifications on 50% or more of their projects, only one-third (31%) say their clients actually implemented these green design specifications.

**What proportion of your clients inquired about green design specifications?**

**What porportion of your clients implemented green design specifications?**



### 3. Importance of Green Building Design Practices

**Architects recognize the importance of green design features and processes, as they help them to meet client demands.**

High-efficiency HVAC systems maintain the highest perceived importance among architects. Specifically, 69% of architects selected high-efficiency HVAC systems as one of the five most important processes in the design of green buildings. Additionally, it was the first or second choice of 41% of respondents.

Architects also find great importance in the use of design software that allows them to:

- ◆ Evaluate and explore alternative building materials to maximize energy performance and minimize environmental impact (among the top five choices for 51% of architects).
- ◆ Conduct energy modeling/baseline analysis (among the top five choices for 49%).

<b>Importance of Features/Processes in Building Design</b>			
<i>Of the 16 items on this list, please select the top five which you consider to be the most important features, evaluations, processes, or design principles in the design and development of green buildings.</i>			
	<b>Importance</b>		
<b>Specifications, Characteristics or Processes</b>	<b>Most Important</b>	<b>Top Two Choices</b>	<b>Top Five Choices</b>
High-efficiency HVAC systems	27	41	69
A renewable, on-site energy source	12	19	39
Predict and evaluate the environmental impact and lifecycle of the building materials	7	15	41
Use of salvaged, refurbished, or reused building materials products	5	10	37
Maximization of interior solar lighting	4	12	38
Predict & evaluate solar lighting	3	6	20
Highly reflective roofing materials	2	6	22
Continuous metering equipment to monitor lighting and heating/cooling systems	2	9	29
Retention Basin for storm-water runoff	1	4	19
“Green” or vegetated roof covering	1	3	11
High-efficiency irrigation technology for grounds	1	2	10
<b>Use of Design Software to:</b>	<b>Most Important</b>	<b>Top Two Choices</b>	<b>Top Five Choices</b>
Energy modeling/baseline analysis	19	29	49
Evaluate and explore alternative building materials to maximize energy performance and minimize environmental impact	9	20	51
Predict and evaluate HVAC operating costs	4	14	30
Specify material quantities and schedules to minimize waste during construction process	3	4	18
Predict & evaluate solar heating	2	6	17

## 4. Use of Green Building Design Practices

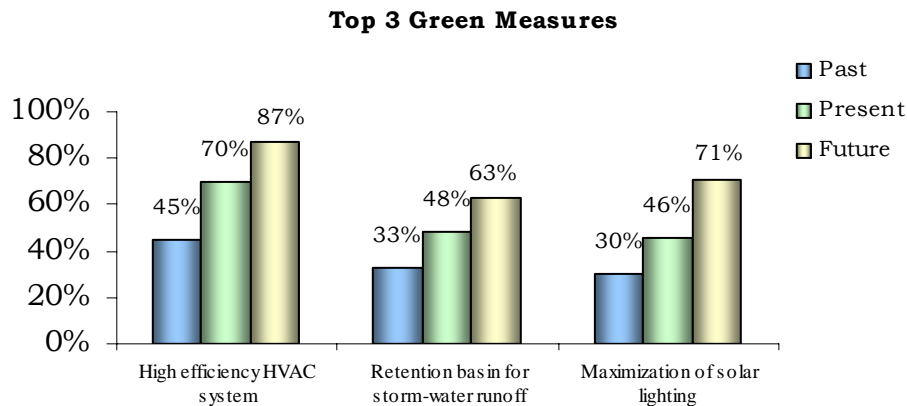
**Architects are making significant strides to meet client demands—most frequently through the use of *high efficiency HVAC systems*.**

Consistent with being the most important green design practice, high efficiency HVAC systems are currently specified by 70% of architects on more than half of their projects. This is a 25% increase compared to what architects were doing five years ago. Further, even greater adoption is expected for 2012. Five years from now 87% of architects expect that high-efficiency HVAC systems will be used on most of their projects.

**Additionally, architects are using *retention basins for storm-water runoff* and *maximization of interior solar lighting*.**

Both of these practices are increasingly common, and are now used by nearly half of architects on at least 51% of their design projects.

- ◆ In the past year, 48% of architects report using *retention basins for storm run-off*, a 15% increase from five years ago. By 2012, 63% of architects expect it will be part of over half of their projects.
- ◆ Similarly, 46% of architects claim to have *maximized solar lighting* in the past twelve months (on more than half their projects). This is a 16% increase from five years ago. By 2012, nearly three-fourths (71%) of architects expect this will be part of over half of their projects.



### Adoption of Green Building Design Practices

About what proportion of your projects included each of the following design specifications, characteristics, or processes (in the last 12 months) (five years ago) (five years from now)?

Specifications, Characteristics or Processes	Five Years Ago		Last 12 Months		Five Years from Now	
	0%-10%	51%-100%	0%-10%	51%-100%	0%-10%	51%-100%
Percent from 11% to 50% not shown.						
High-efficiency HVAC systems	27	45	9	70	4	87
Retention basin for storm-water runoff	49	33	35	48	18	63
Maximization of interior solar lighting	44	30	27	46	10	71
Highly reflective roofing materials	58	23	35	41	16	68
Continuous metering equipment to monitor lighting and heating/cooling systems	68	16	51	29	22	57
Use of salvaged, refurbished, or reused building materials products	63	14	43	27	18	55
Predict and evaluate the environmental impact and lifecycle of the building materials	78	10	59	16	28	52
“Green” or vegetated roof coverings	90	3	81	7	49	24
A renewable, on-site energy source, i.e., solar, wind, geothermal, low-impact hydro, biomass, or bio-gas	88	5	80	6	38	29

#### Using the design process to reduce building energy consumption also includes increased reliance on design software.

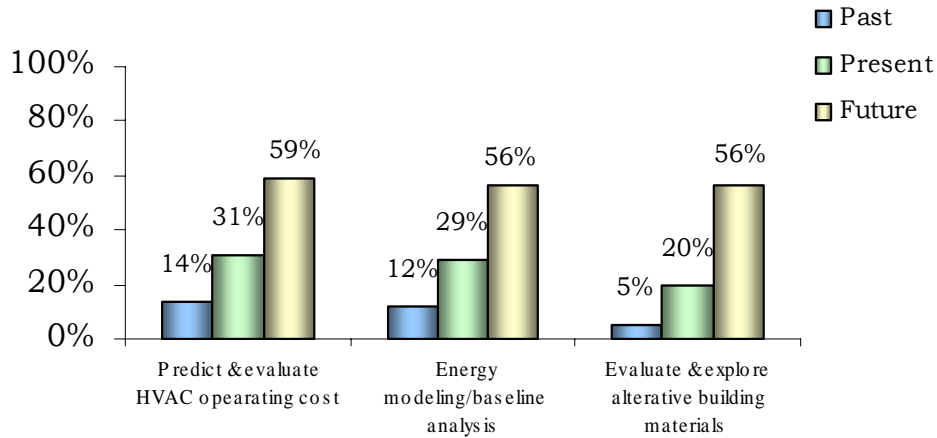
Design software will be increasingly used to *predict operating costs of HVAC systems*. Architects also expect significant increases in the use of design software for *energy modeling and baseline analysis*.

- ◆ Five years ago, only 14% of architects incorporated HVAC cost projections using design software on more than half of their projects. In 2007 nearly one-third of architects (31%) used HVAC cost projections with the help of design software. By 2012, 59% of architects expect operating cost predictions to be done on over half of their design projects.
- ◆ Similarly, this year 29% of architects used energy modeling/ baseline analysis on over half of their projects compared to only 12% five years ago. Use should continue to rise, with 56% of architects expecting to use energy modeling in the next five years.
- ◆ Five years ago, only 5% of architects were using design software to evaluate and explore alternative building materials to maximize energy performance and minimize environmental impact on more than half of their projects. Currently this practice is used by 20% of architects and usage is expected to increase to 56% of architects five years from now.

About what proportion of your projects did you use design software to do each of the following during the design process (in the last 12 months) (five years ago) (five years from now)?

Use of Design Software to:	Five Years Ago		Last 12 Months		Five Years from Now	
	0%-10%	51%-100%	0%-10%	51%-100%	0%-10%	51%-100%
Percent from 11% to 50% not shown.						
Predict and evaluate HVAC operating costs	69	14	49	31	22	59
For energy modeling/baseline analysis	73	12	52	29	25	56
Evaluate and explore alternative building materials to maximize energy performance and minimize environmental impact	80	5	58	20	23	56
Specify material quantities and schedules to minimize waste during construction process	87	5	71	14	33	46
Predict and evaluate solar heating	85	5	69	12	30	47

**Top 3 Uses of Design Software**



**Additionally, architects who use Business Information Modeling (BIM) are more likely to adopt green building design software practices.**

Design software practices are significantly more likely to be used (currently and in the future) by architects who use BIM. Practices most utilized include using design software to *predict and evaluate HVAC operating costs, energy modeling and baseline analysis, and evaluating and exploring alternative building materials to maximize energy performance and minimize environmental impact.*

- ◆ Currently, 45% of architects who use BIM, report using design software to *predict and evaluate HVAC operating costs*. This is a 26% difference compared to architects who do not use BIM.
- ◆ Similarly, 44% % of architects who use BIM report using design software for *energy modeling and baseline analysis*, compared to only 18% of those who don't use BIM.
- ◆ This year 29% of architects who use BIM agree that they will use design software to *evaluate and explore alternative building materials to maximize energy performance and minimize environmental impact* (a 17% increase from those who don't use BIM).

## Adoption of Design Software for Green Building Using BIM

*Do you or your firm use building information modeling (BIM)?*

*About what proportion of your projects did you use design software to do each of the following during the design process (in the last 12 months) (five years ago) (five years from now)?*

Use of Design Software to:	Five Years Ago		Last 12 Months		Five Years From Now	
	Use BIM	No BIM	Use BIM	No BIM	Use BIM	No BIM
<b>51-100%</b>						
Predict and evaluate HVAC operating costs	22	7	45	19	73	48
Energy modeling/baseline analysis	19	7	44	18	75	41
Evaluate and explore alternative building materials to maximize energy performance and minimize environmental impact	8	3	29	12	71	44
Specify material quantities and schedule to minimize waste during the construction process	7	3	19	10	63	33
Predict and evaluate solar heating	8	3	19	7	61	36

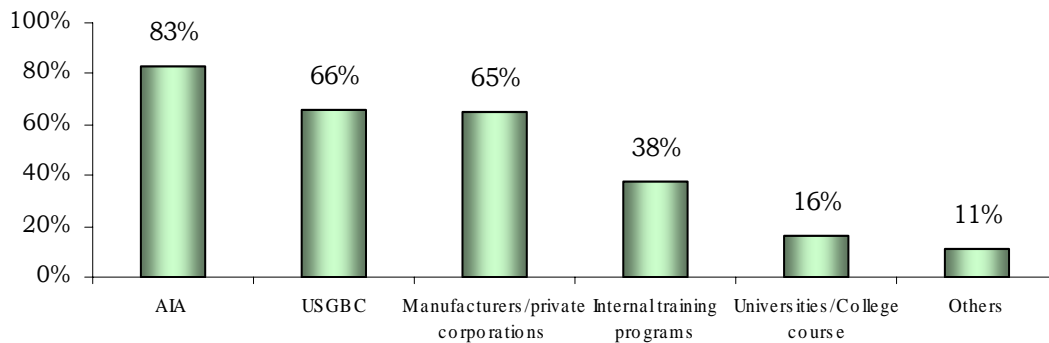
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**Furthermore, architects are consulting civil engineers and obtaining additional training to ensure green practices are being implemented.**

To take building green to the next level, more than one-third of architects (35%) are consulting with civil engineers on more than half of their projects to add value to green building projects.

In addition, nearly 9 out of 10 architects (88%) say they have received training or continued education that focuses on green building. With the majority of architects receiving further education through an AIA continuing education program (83%), the USGBC (66%) and manufacturers/private corporations (65%).

**What resources have you used for training and continuing education that focuses on green building?**



**5. Green Building Design Practices—by Practice Type**

**Architects across all practice types are moving forward in the adoption of green design practices, and are predicted to continue this adoption in the future.**

It is important to note that architects across all types of design projects are taking steps to incorporate green design practices. For example, architects who work on commercial, single family homes and institutional design projects are all likely to use high-efficiency HVAC systems.

<b>Number of Architects Surveyed by Type Practice</b>	
<i>Which type of building design projects are you predominately involved in?</i>	
	2007 Total
Commercial	154
Single-family homes	69
Institutional	112
Industrial	12
<b>Total</b>	<b>347</b>

Those who work predominately with single-family homes are likely to incorporate:

- ◇ High efficiency HVAC systems (70% currently, 90% 5 years from now)
- ◇ Maximization of interior solar lighting (57% currently, 75% future)

Those involved predominately with commercial design projects are likely to incorporate:

- ◇ High efficiency HVAC systems (65% currently, 86% 5 years from now)
- ◇ Retention basin for storm-water run-off (55% currently, 68% future)
- ◇ Highly reflective roofing materials (44% currently, 72% future)
- ◇ Maximization of interior solar lighting (40% currently, 66% future)

Those involved predominately with institutional design projects are likely to incorporate:

- ◇ High efficiency HVAC systems (76% currently, 90% 5 years from now)
- ◇ Retention basin for storm-water run-off (57% currently, 69% future)
- ◇ Highly reflective roofing materials (52% currently, 76% future)
- ◇ Maximization of interior solar lighting (47% currently, 79% future)

<b>Adoption of Green Design Practices-by Practice Area</b>									
<i>About what proportion of your projects included each of the following design specifications, characteristics, or processes (in the last 12 months) (5 years ago) (5 years from now)? Give your best estimate.</i>									
	<b>Single-Family Homes Design Projects (N=69)</b>			<b>Commercial Design Projects (N=6154)</b>			<b>Institutional Design Projects (N=112)</b>		
50% -100%									
<b>Specifications, Characteristics or Processes</b>	<b>5 years ago</b>	<b>Past 12 months</b>	<b>5 years from now</b>	<b>5 years ago</b>	<b>Past 12 months</b>	<b>5 years from now</b>	<b>5 years ago</b>	<b>Past 12 months</b>	<b>5 years from now</b>
High-efficiency HVAC systems	59	75	90	38	65	86	48	76	90
Retention basin for storm-water runoff	12	22	48	40	55	68	38	57	69
Maximization of interior solar lighting	45	57	75	23	40	66	33	47	79
Highly reflective roofing materials	14	20	49	25	44	72	26	52	76
Continuous metering equipment to monitor lighting and heating/cooling systems	4	9	35	19	29	58	20	40	69
Use of salvaged, refurbished, recycled or reused building materials	13	25	49	12	25	55	18	31	60
Prediction and evaluation of the environmental impact	7	10	45	8	14	50	13	22	60
“Green” or vegetated roof coverings	3	3	16	3	6	27	5	11	27
A renewable, on-site energy source	6	7	38	4	6	27	6	5	31
<b>Use Design Software to:</b>	<b>years ago</b>	<b>Past 12 months</b>	<b>from now</b>	<b>5 years ago</b>	<b>Past 12 months</b>	<b>5 years from now</b>	<b>5 years ago</b>	<b>Past 12 months</b>	<b>5 years from now</b>
Predict and evaluate HVAC operating costs	4	14	45	12	33	58	22	38	72
For energy modeling/baseline analysis	9	14	45	14	31	54	14	39	69
Evaluate and explore alternative building materials to maximize energy performance and minimize environmental impact	0	12	41	8	19	57	5	27	64
Specify material quantities and schedules to minimize waste during construction process	3	12	39	7	15	45	4	16	53
Predict and evaluate solar heating	4	9	44	6	14	46	5	13	53

*\*Industrial base size too small to report*

## 6. Industry Goals

**Most architects believe that the personal design work they do will support the AIA goal of reducing building and construction related fossil-fuel usage by 2010.**

In 2005, the American Institute of Architects (AIA) established a goal to:

“Reduce by 50 percent the building and construction related fossil-fuel usage between 2005 and 2010 through the use of integrated/high performance design.”

The majority of architects (54%) believe the work they do is likely to support this goal of substantially reducing building and construction related fossil-fuel usage. This includes 16% who are particularly confident in this regard.

### Reduction of Building and Construction-Related Fossil-Fuel Usage

*In 2005, the American Institute of Architects (AIA) established a goal of reducing by 50 percent the building and construction related fossil-fuel usage between 2005 and 2010 through the use of integrated/high performance design.*

*Considering the types of projects you work on, how likely is it that the work you do will support this target, that is, substantially reduce building and construction related fossil-fuel usage?*

Quite likely (75% to 100% likely)	16
More likely than not (50% to 74% likely)	38
Less likely than not (25% to 49% likely)	28
Not likely (0% to 25% likely)	13
Have absolutely no idea	4

**Additionally, architects believe that the industry will make significant progress toward the 2010 goal.**

Nearly two-thirds of architects (63%) believe that by 2010 the industry will have made significant progress of reducing 50% of building and construction related fossil-fuel usage.

### Industry Progress toward AIA Goal

*By 2010, how much progress do you think the industry will have made toward its goal of reducing by 50 percent building and construction related fossil-fuel usage?*

Meet or exceed the 50% target	9
Approach the 50% target (40% to 49%)	19
Make significant progress (30% to 39%)	35
Make limited progress (20% to 29%)	28
Make little progress (0% to 19%)	8
Have absolutely no idea	2

**Appendix**

**INVITE**

Dear AIA Member:

As part of our ongoing efforts to better understand how America's architects are practicing sustainable design, we're interested in learning more about your opinions and green building practices. The AIA is partnering with Autodesk to conduct a survey of AIA members, and invite you to participate to share your perspective and information on recent projects. As a thank you for spending 5 to 10 minutes of your time responding to the survey, you will have the opportunity to enter into a drawing for one of 40 gift certificates to Amazon.com in the amount of \$25. Your feedback will also help inform and influence our ongoing efforts to address climate change through the practice of sustainable design.

You can access this survey [here](#) or by clicking the link below any time between now and October 12, 2007. We appreciate your time and support of our efforts to better represent and serve the architectural community. Thank you in advance for your valuable insight.

Sincerely,

AIA and Autodesk

Survey URL: XX

[Click here for rules for the Amazon gift card sweepstakes:](#)

## QUESTIONNAIRE

1. Are you a practicing architect, involved in the design of residential, commercial, industrial, and/or institutional buildings?  
 Yes  
 No (TERMINATE)
  
2. Which type of building design projects are you predominately involved with?  
{Choose one}  
 Commercial (including apartments and multi-family housing units)  
 Single-family homes  
 Institutional  
 Industrial
  
3. Approximately how many different [PROJECT] design or building projects were you involved with during the past 12 months? (Select one)  
 None  
 One  
 Two  
 Three  
 Four  
 Five to nine  
 10 to 14  
 15 to 19  
 20 to 24  
 25 or more
  
4. In what state/province/country do you live? (Select one from the drop down menu)  
- INCLUDE ALL US STATES, CANADAIAN PROVINCES, COUNTRIES
  
5. What is your firm size (including all offices)?  
 Sole practitioner  
 Two to four  
 5 – 9  
 10 – 19  
 20 – 49  
 50 – 99  
 100 or more
  
6. In your opinion, rate how strongly you believe that global climate change (sometimes referred to as global warming) is actually occurring and is the result of human activities (such as burning fossil fuels). Please make your rating on a 1 to 5 scale, where 1 means Not Actually Occurring/No Human Involvement and 5 means Actually Occurring/Caused by Human Activities.

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7. Do you currently measure the carbon footprint of your projects?

- Yes
- No

8. About what proportion of your [PROJECT] projects included each of the following design specifications, characteristics, or processes? Give your best estimate. (Select one answer for each specification, characteristic, or process, for each period)

(Each Question Asked for 3 periods):

- CURRENT (Last 12 months)
- PAST (5 years ago)
- EXPECTED IN FUTURE (5 years from now)

- a) Retention basin for storm-water runoff
- b) Highly reflective roofing materials
- c) "Green" or vegetated roof coverings
- d) High-efficiency HVAC systems
- e) Continuous metering equipment to monitor lighting and heating/cooling systems
- f) A renewable, on-site energy source, i.e., solar, wind, geothermal, low-impact hydro, biomass, or biogas
- g) Prediction and evaluation of the environmental impact and life cycle of the building materials (extraction, manufacture, transportation, construction, operation, and demolition)
- h) Use of salvaged, refurbished, recycled, or reused building materials products
- i) Maximization of interior solar lighting

- 90% or greater
- 51% to 89%
- 11% to 50%
- 1% to 10%
- None

9. About what proportion of your [PROJECT] projects did you use design software to do each of the following during the design process? Give your best estimate for each year. (Select one answer for each item, for each period)

(Each Question Asked for 3 periods):

- CURRENT (Last 12 months)
- PAST (5 years ago)
- EXPECTED IN FUTURE (5 years from now)

- a) Specify material quantities and schedules to minimize waste during construction process
- b) Predict and evaluate solar heating
- c) Predict and evaluate HVAC operating costs
- d) Evaluate and explore alternative building materials to maximize energy performance and minimize environmental impact
- e) Energy modeling/baseline analysis

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10. Of the 15 items on this list, please select the top five which you consider to be the most important features, evaluations, processes, or design principles in the design and development of green buildings. (Click on the most important first, second-most important second, etc.)

- Retention basin for storm-water runoff
- Highly reflective roofing materials
- "Green" or vegetated roof coverings
- High-efficiency irrigation technology for grounds
- High-efficiency HVAC systems
- Continuous metering equipment to monitor lighting and heating/cooling systems
- A renewable, on-site energy source (i.e., solar, wind, geothermal, low-impact hydro, biomass or bio-gas)
- Predict and evaluate the environmental impact of the life cycle of building materials, including their extraction, manufacture, transportation, construction, operation, and demolition
- Use of salvaged, refurbished, recycled, or reused building materials products
- Maximization of interior solar lighting
- Specify material quantities and schedules to minimize waste during construction process
- Predict and evaluate solar heating
- Predict and evaluate solar lighting
- Predict and evaluate HVAC operating costs
- Evaluate and explore alternative building materials to maximize energy performance and minimize environmental impact
- Energy modeling/baseline analysis

11. In 2005, the AIA established a goal of reducing by 50 percent the building and construction related fossil-fuel usage between 2005 and 2010 through the use of integrated/high performance design. Considering the types of projects you work on, how likely is it that the work you do will support this target, that is, substantially reduce building and construction related fossil-fuel usage?

- Quite likely (75% to 100% likely)
- More likely than not (50% to 74% likely)
- Less likely than not (25% to 49% likely)
- Not likely (0% to 25% likely)
- Have absolutely no idea

12. By 2012, how much progress do you think the industry will make toward its goal of reducing by 50 percent building and construction related fossil-fuel usage by 2030?

- Meet or exceed the 50% target
- Approach the 50% target (40% to 49%)
- Make significant progress (30% to 39%)
- Make limited progress (20% to 29%)
- Make little progress (0% to 19%)
- Have absolutely no idea

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13. Each of the following factors could influence your likelihood to design green buildings. From your perspective, which three are most likely to increase the extent of your green building practices and procedures? (Select three only)

- Regulatory requirements
- Rising energy costs
- Client demand
- Personal sense of environmental responsibility
- Government/industry incentives
- Long-term return on investment

14. About what proportion of your [CLIENT] clients inquire about “green” design specifications, characteristics, or processes in the past 12 months? Give your best estimate

- 100 %
- 90%
- 80%
- 70%
- 60%
- 50%
- 40%
- 30%
- 20%
- 10%
- 1% to 10%
- None

15. About what proportion of your [CLIENT] clients actually implemented “green” design specifications, characteristics, or processes in the past 12 months? Give your best estimate

- 100 %
- 90%
- 80%
- 70%
- 60%
- 50%
- 40%
- 30%
- 20%
- 10%
- 1% to 10%
- None

16. What are the primary reasons you believe most of your clients are interested in green building? (Select two only)

- reduced operating costs
- improved public and occupant health
- reduced environmental impacts
- public relations/marketing
- market demand
- Other (please specify): \_\_\_\_\_

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17. To what extent do you agree with the following statements, where 5 is “strongly agree” and 1 is “strongly disagree.”

- Overall, when thinking about architecture and the environment, I feel the profession is headed in the right direction?
- I am typically the one to initiate the conversation about making buildings environmental friendly to clients
- My organization has produced an educational brochure/package on “building green” for clients
- My organization is starting to implement standard operating procedure to inform clients on “building green”
- Architects should practice sustainable design whenever possible.
- Practicing sustainable design is one possible answer to the issue of global/warming/climate change.
- Architects are responsible for developing and implementing solutions to the issue of climate change.

18. Do you or your firm use a computer-assisted design system? (Select one)

- Yes
- No

19. Do you or your firm use building information modeling (BIM)?

- Yes
- No

20. On what percentage of projects do Civil Engineering consultants add value to your green building projects?

- 100% of projects
- 76% to 99% of projects
- 51% to 75% of projects
- 26% to 50% of projects
- 11% to 25% of projects
- 1% to 10% of projects
- Zero percent

21. Have you received any training or continuing education that focused on green buildings? (Select one)

- {Choose one}
- Yes
  - No

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21.a If YES, please tell us which of the following resources you have used? (Select all that apply)

- AIA continuing education programs
- Internal training programs
- USGBC
- Manufacturers or private corporations
- Universities/college courses
- Others (please specify): \_\_\_\_\_

22. How many years have you been an architect? (Select one)

- Four years or less
- Five to nine years
- Ten to fourteen years
- 15 or more years