

Chartered Quantity  
Surveyors Perspective on

# Building Information Modelling (BIM)

Survey of Professionals  
May 2017



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Chartered Quantity Surveyors' Perspective on

# Building Information Modelling Survey of Professionals

May 2017

# Acknowledgements

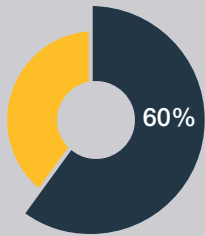
## SCSI BIM Working Group

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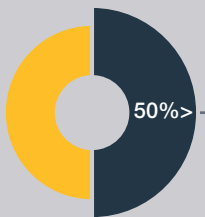
# SCSI Document Status Defined

Type of document	Definition	Status
<b>Standard</b>		
International standard	An international high-level principle-based standard developed in collaboration with other relevant bodies.	Mandatory
<b>Professional</b>		
SCSI/RICS professional statement	<p>A document that provides members with mandatory requirements or a rule that a member or firm is expected to adhere to.</p> <p>This term encompasses practice statements, Red Book professional standards, global valuation practice Statements, regulatory rules, SCSI/RICS Rules of Conduct and government codes of practice.</p>	Mandatory
<b>Guidance</b>		
SCSI/RICS code of practice	Document approved by SCSI/RICS, and endorsed by another professional body/stakeholder, that provides users with recommendations for accepted good practice as followed by conscientious practitioners.	Mandatory or recommended good practice (will be confirmed in the document itself).
SCSI/RICS guidance note (GN)	Document that provides users with recommendations or approach for accepted good practice as followed by competent and conscientious practitioners.	Recommended best practice. Usual principles apply in cases of negligence if best practice is not followed.
SCSI/RICS information paper (IP)	Practice-based document that provides users with the latest technical information, knowledge or common findings from regulatory reviews.	<p>Information and/or recommended good practice.</p> <p>Usual principles apply in cases of negligence if technical information is known in the market.</p>
SCSI/RICS Insights	Issues-based input that provides users with the latest information. This term encompasses thought leadership papers, market updates, topical items of interest, white papers, futures, reports and news alerts.	Information only.
SCSI/RICS economic/market report	A document usually based on a survey of members, or a document highlighting economic trends.	Information only.

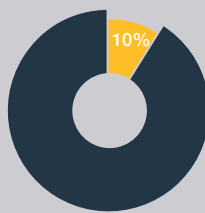
# Key highlights



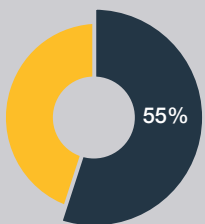
60% of QS firms intend to, or have already, adopted BIM



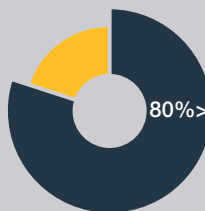
Over half of QS's are carrying out automated quantity take off using BIM models



Only one in ten QS firms will not implement BIM



55% of QS's will be working on a Level 2 BIM project in the next 2 years



Significant majority (over 80%) of QS's state that BIM will improve efficiency and speed on quantity take off.



BIM education at third level college is seen by most as very important

# Foreword

The advancement of technology in recent years has provided our professions and industry with significant positives in terms of driving efficiencies, performance and standards. This level of technological progression is unlikely to slow down in the future but, to the contrary, the next ten years is predicted to witness significant changes in the way we do business and the way we can offer services. One recent example of this is the introduction of Building Information Modelling (BIM).

As a professional body striving for high standards and excellence, we are delighted to see that government acknowledge and appreciate the value that BIM technology brings to our processes and systems in the built environment. Initially committed to in the Forfás Construction Sector Strategy, the Office of Government Procurement has shown its intention to introduce BIM on a mandatory basis for certain public works. This is a positive development and one that we believe will instil some level of confidence that BIM is worth investing in to deliver the type of projects for our future.

I have no doubt that the Quantity Surveying profession will meet this increased demand for BIM services and will be key advocates for embracing and advancing upskilling for our sector.

Our recent survey of QS members indicate that the vast majority of QS practices have either adopted BIM or have a strategy in place to implement BIM in the near future.

This is encouraging and highlights that the QS is a key component of this collaborative technology process.

As an organisation, our objective is to provide assistance and supports to individual members during the implementation process and I look forward to tackling these challenges with the support of my committee and the SCSi executive.

**Michéal Mahon FSCSI FRICS**

Quantity Surveying Professional Group Chairman



# Introduction

Building Information Modelling (BIM) is one of the most promising developments in the modern construction industry. With an increasing level of collaboration amongst industry professionals in recent years, BIM is seen as an emerging technology which is revolutionising how buildings are designed, constructed and operated. The growing popularity of BIM globally in the construction industry amongst all professional disciplines has seen it move from the research paradigm into a commercial reality.

In a strengthening construction sector where output is currently increasing to 7.5 % of GDP, QS practices are showing an improved level of confidence following the industry stagnation of the past. With this improved confidence, our report shows that more firms are gearing up to accept BIM as a technology for the future. Benefits of BIM include increased visualisation for client's at project concept stage, the opportunity to construct the building before construction stage which results in building it right. Most importantly BIM optimises facilities management through the life of a building.

Recent economic forecasts predict economic growth of 3.5% in 2018 with a satisfactory level of optimism in the near future. At present, our capacity to deliver on projects is already challenged due to the lack of suitable graduates and trades. This may require urgent action to consider more innovative methods of delivery of products and BIM is likely to be one of the catalysis to assist in this change.

Our report which analysis data from previous years, show that our profession is moving in the right direction to meet these challenges. The results of our most recent survey show how far we have come in four years which identifies Qs's level of understanding and current adoption levels of BIM. The survey was carried out to gain an insight into current knowledge levels and attitudes of the QS members in relation to BIM, as well as identifying the key areas which members feel should be addressed in order to increase the use of BIM by the QS profession.

Responses to this survey were received from 121 SCS Quantity Surveying members.



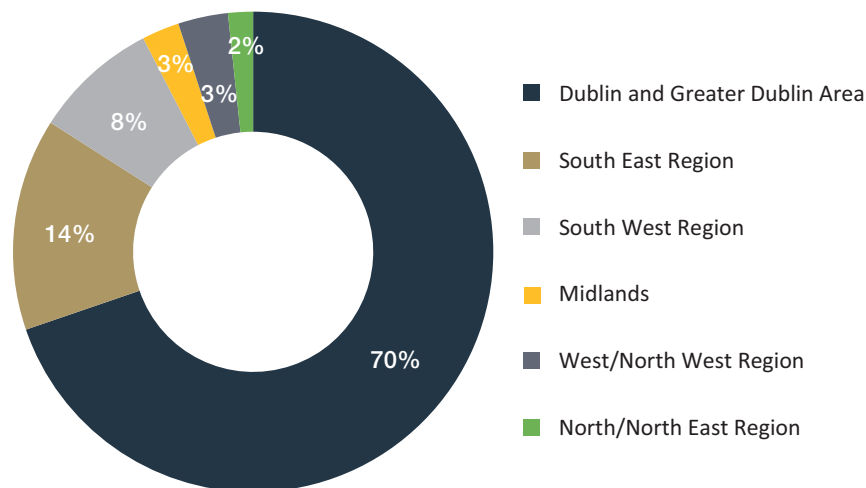
# Summary of Responses

## Response by Region

70% of respondents to this survey were from the Greater Dublin area, with 14% from the South East, 8% from South West, 3% each from the Midlands and West, while the remaining 2% of respondents were from the North/North East region.

51% of SCSi membership is located outside the Dublin region and of this, the majority are from small to medium sized enterprises.

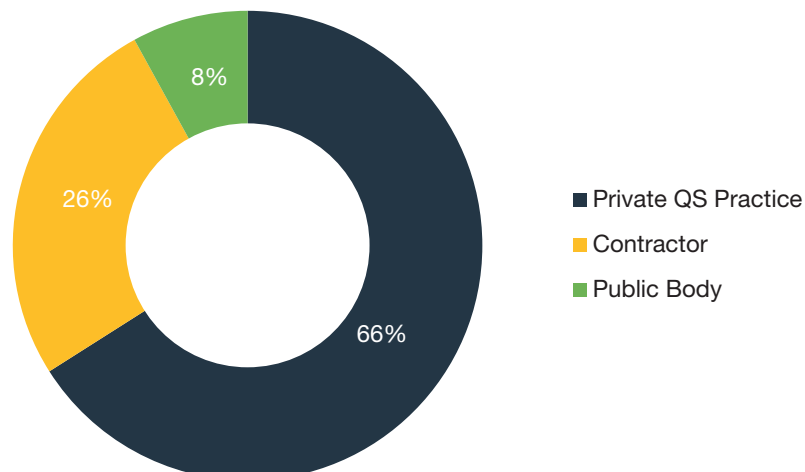
Chart 1: Responses by Region



## Response by Practice Type

66% of respondents work within a PQS practice. 26% of respondents work for a contractor (Main, Sub or Specialist Contractor), with 8% of respondents working for a Public Body.

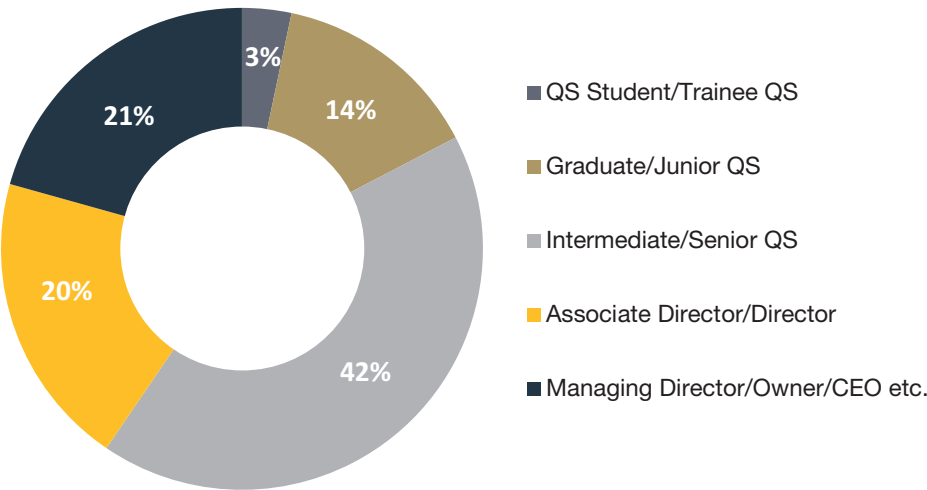
Chart 2: Practice Type



# Response by Position

42% of respondents hold an Intermediate or Senior position within their firm. Responses came from all levels of responsibility representing a balanced response.

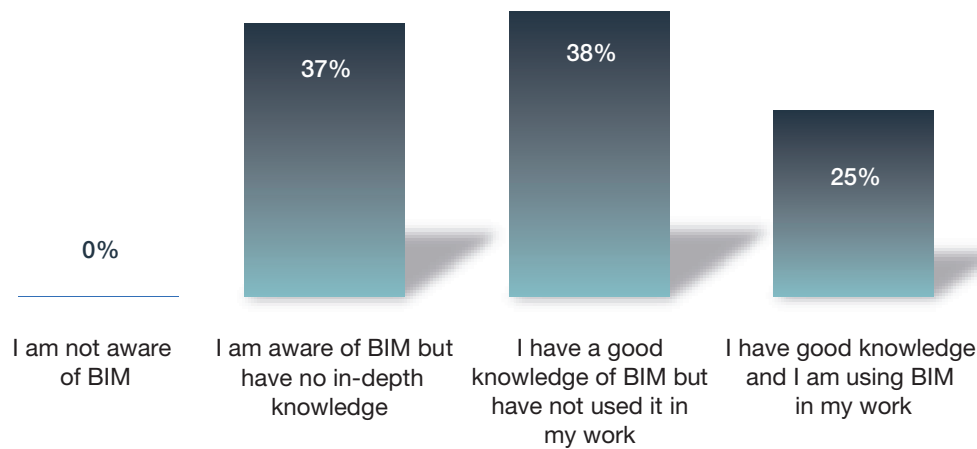
Chart 3: Position



# Current Use and Understanding of BIM

Our 2017 survey results show that 100% of QS's are now aware of BIM. This is an increase on those surveyed in 2013 and is reflective of the increased interest within the Irish Construction Industry. 63% of respondents have a 'Good level of BIM Knowledge' or are currently using it in their work.

Chart 4: Understanding and Use of BIM



## Key tasks carried out using BIM

Chart 5: BIM Tasks

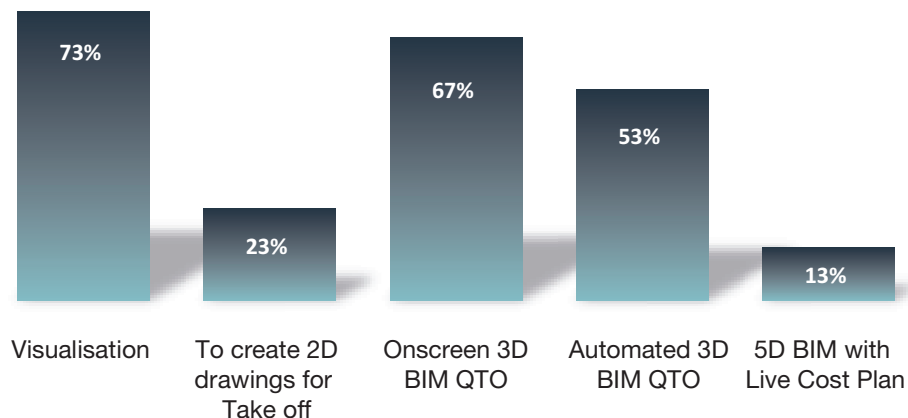
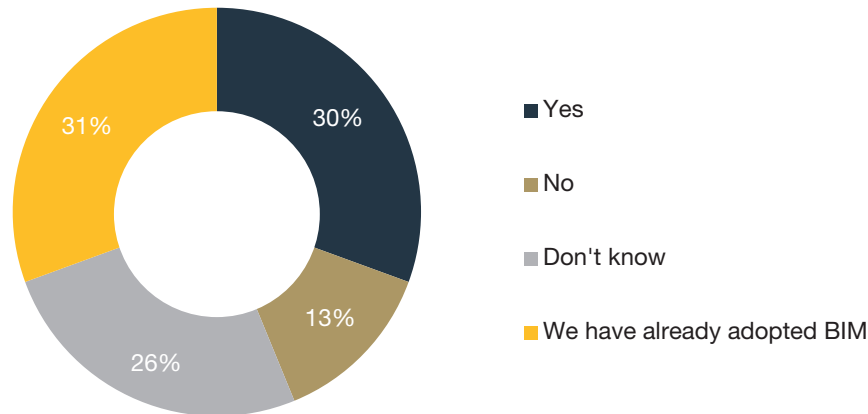


Chart 4 shows the different key tasks carried out by those currently using BIM. The majority are using the model for visualisation however there is a large number using BIM for onscreen 3D take-off and more importantly, for automated 3D BIM take off.

## Company BIM Strategy

Moving away from the individual's experience, the respondents were asked about their company's overall adoption of BIM.

Chart 6: Does your company plan to adopt BIM?

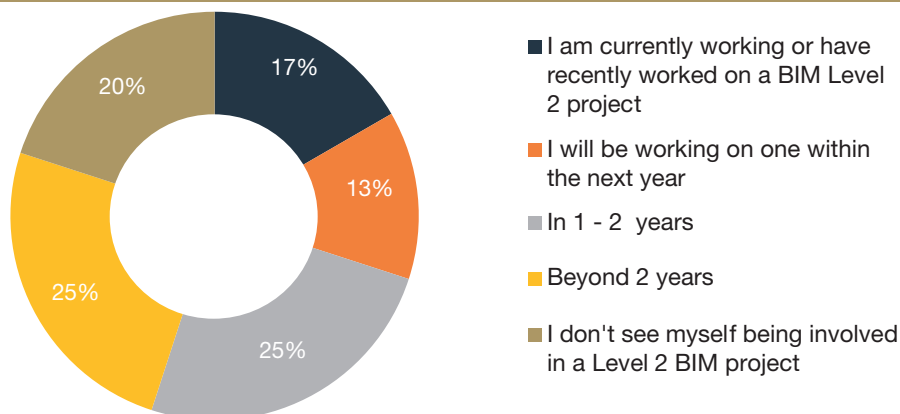


62% of respondents are working for a firm who have either already implemented BIM or plan to formally implement BIM. Only 13% of respondents' will not adopt BIM which is a 3% decrease from 2013.

## Level 2 BIM projects

This question looked at the respondent's current or potential involvement in a BIM Level 2 project.

Chart 7: Do you see yourself working on BIM Level 2 project soon?



30% of respondents are currently working on, or will be working on, a BIM Level 2 project within the next year. An additional 25% see themselves working on a BIM Level 2 project in the next 1-2 years, while 25% believe it will be beyond 2 years before they will be working on a Level 2 BIM project.

## Summary

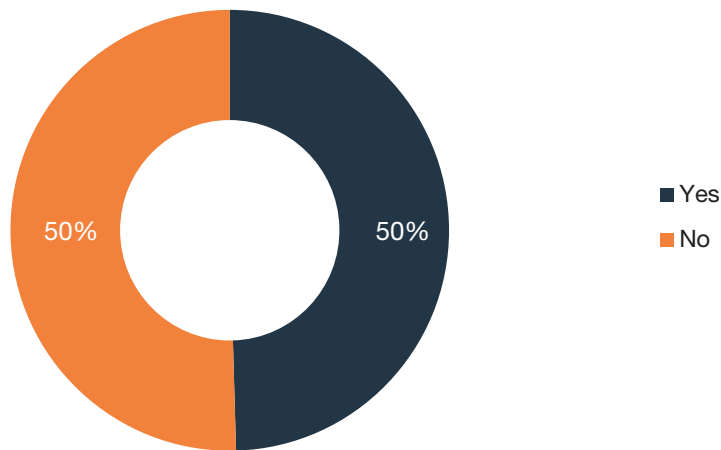
Results within this section illustrate the growing use of BIM within the Irish construction industry and the QS profession. Most companies are planning to adopt BIM while the majority (55%) of Qs see themselves working on a Level 2 BIM project within the next 2 years. This is a positive outlook for the QS adoption of BIM and illustrates the demand there will be for training and guidance in the near future.

# Training and Software

## BIM Training

*Q. Does your company have QSs trained to use BIM to complete QS tasks (eg. Quantity Take-off)*

Chart 8: Does your company have QSs trained to use BIM to complete QS tasks (eg. Quantity Take-off)

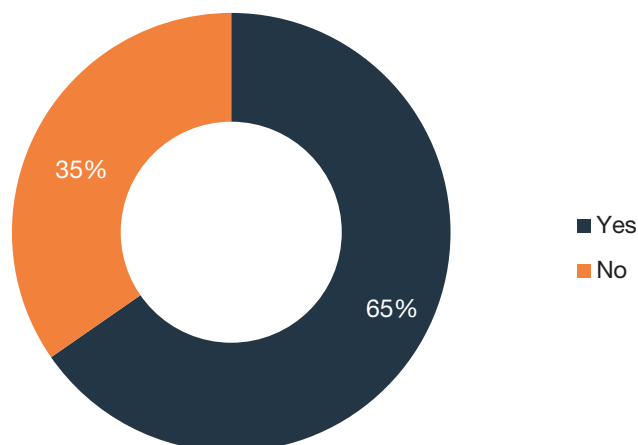


50% of respondent's work within companies that have QSs trained to use BIM to complete QS tasks such as take off.

## BIM Software

*Q. Does your company have software which facilitates the use of BIM models for the QS? (eg. Visualisation or BIM Quantity Take-off)*

Chart 9: Does your company have software which facilitates the use of BIM models for the QS? (eg. Visualisation or BIM Quantity Take-off)

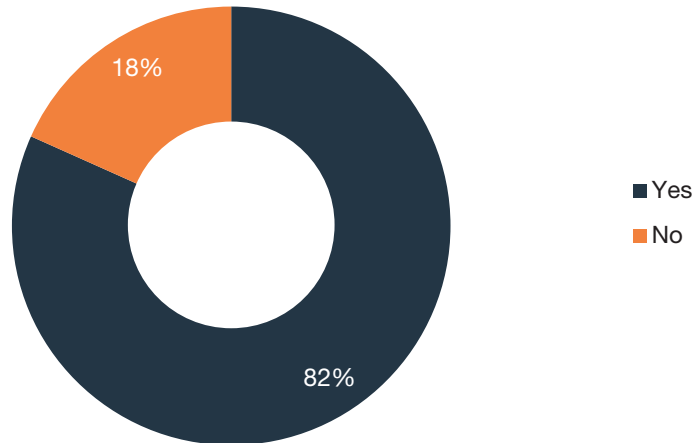


65% of respondent's work within companies that have software which facilitates the use of BIM models for the QS. When compared to the previous question, this shows that while companies have the software, they do not have the employees to use the software. This shows a need for increased QS training in using BIM.

## Benefits and Barriers to using BIM

*Q. Do you believe BIM improves the accuracy of quantity take off for the QS?*

Chart 10: Do you believe BIM improves the accuracy of quantity take off for the QS?



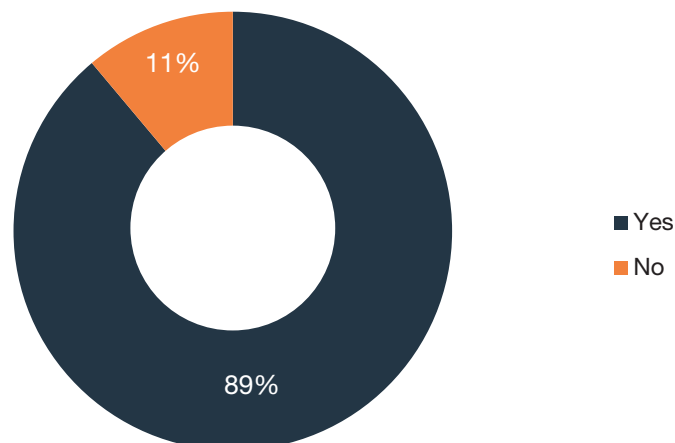
The majority of respondents believe that BIM can offer improved accuracy in QS take off of quantities. Some respondents felt that clear areas (Floors, walls and ceilings) can be measured with greater accuracy, as well as complicated structures or façades which may not be as easily measured from 2D drawings.

However, the inclusion of extra over items such as deflection and connection details may not be modelled and will still require the knowledge and experience of the QS to include these within their measure.

Accuracy also depends on the level of information designed within a model and the quality of the model design. Input and feedback from the QS when the model is being created can be crucial in insuring the correct information is included within the model for accurate take off.

*Q. Do you believe BIM increases the speed at which you can complete quantity take off?*

Chart 11: Do you believe BIM increases the speed at which you can complete quantity take off?



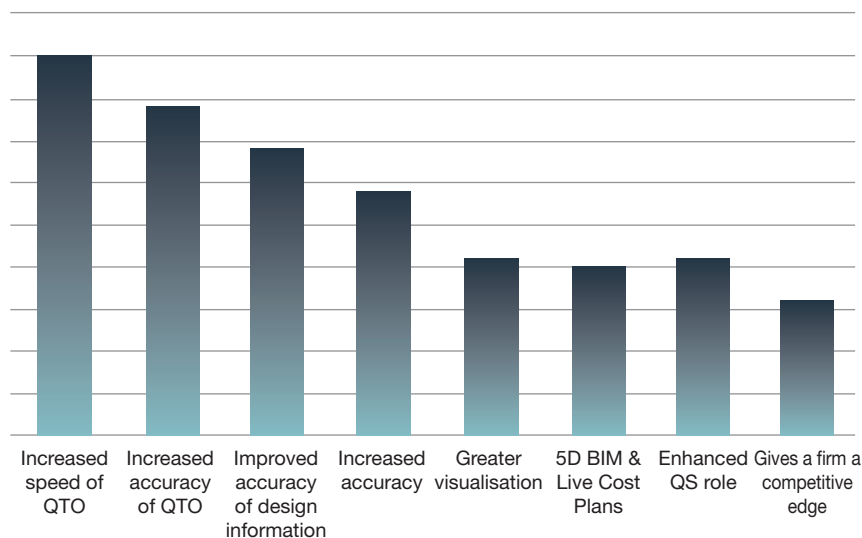
BIM can also improve the speed at which take off can be carried out manually, and more so, through the use of automated take-off, however the verification and cross-checking of quantities will now become increasingly important to confirm the accuracy of quantities from a model.



## Benefits to the QS

This question allowed respondents to rank on a scale of 1 - 5 what they felt are the biggest benefits for a QS using BIM. The graph below shows the average ranking of each benefit.

Chart 12: What do you see as the benefits of BIM for the QS?



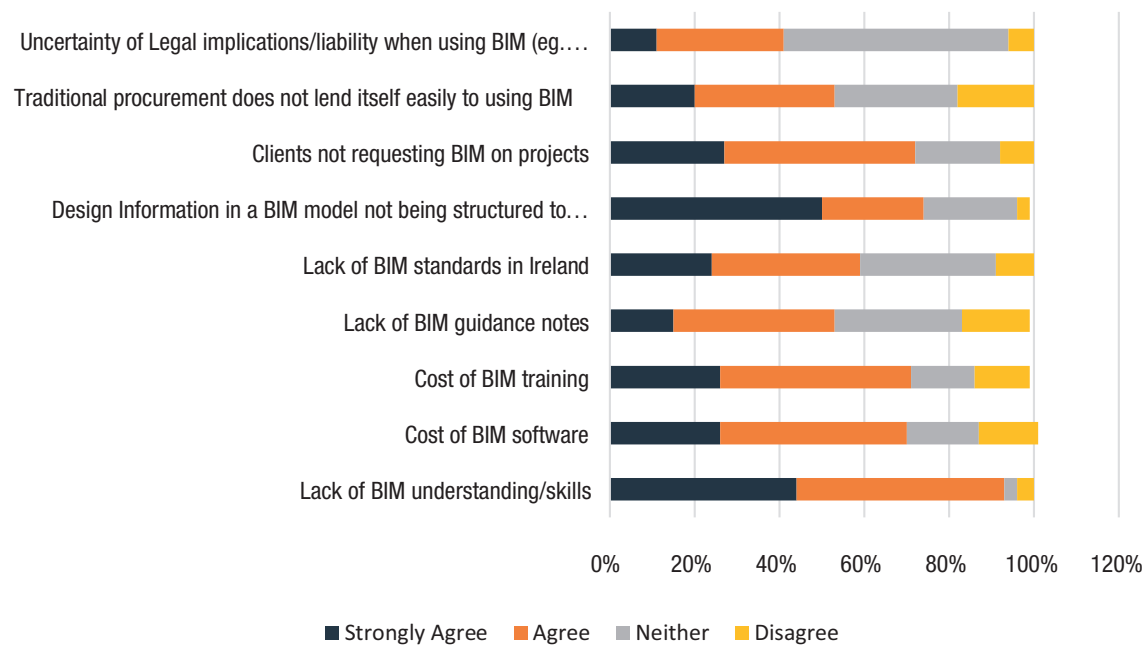
The results of this question show that increased speed and accuracy of measurement in BIM are key benefits to the QS. As a design change in a BIM model is reflected in all views and throughout the model information, the consistency of design information is also beneficial to the QS.

It is important to understand how increased efficiency and speed in measuring can enhance the role of the QS as opposed to threatening it. Time saved in measuring can allow the QS to provide additional value adding services such as Value Engineering, Life Cycle Costing and Carbon Costing.

## Barriers to BIM adoption

The results above highlight the many benefits to the QS in using BIM. It was therefore important to investigate the key reasons that more Quantity Surveyors in Ireland are not using BIM. Again, respondents were required to rank their answers.

Chart 13: Which of the following reasons do you believe are barriers to the QS adopting BIM in Ireland?

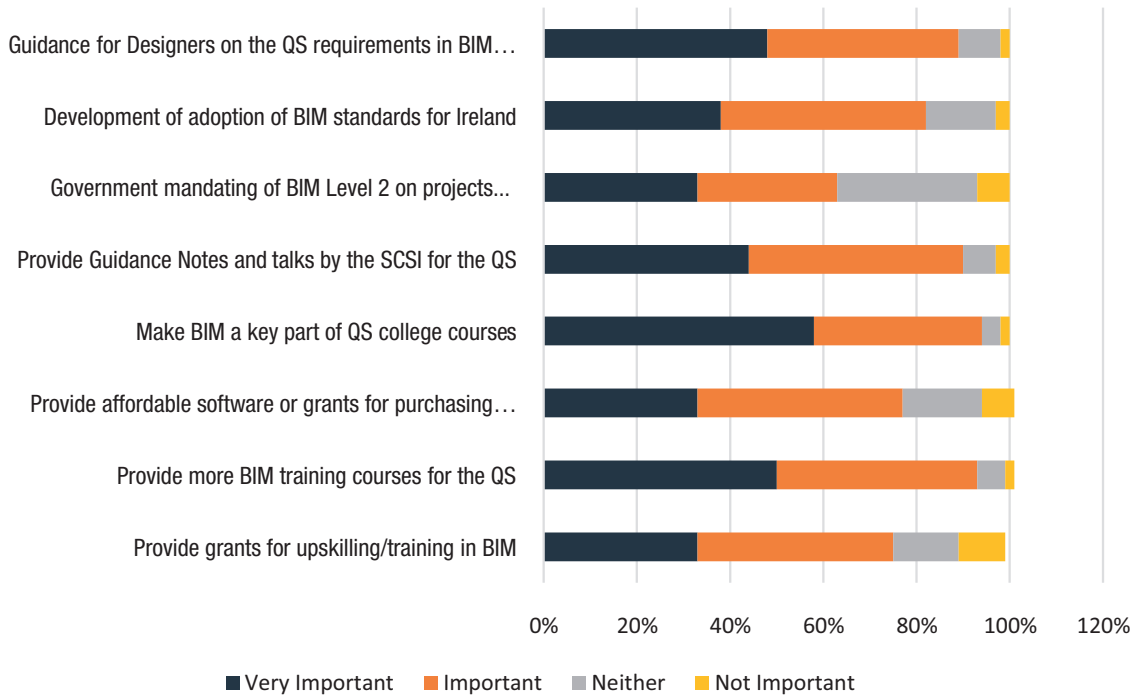


Respondents strongly feel that design information within models not being structured correctly or, poorly designed models deter the QS from using a BIM model in carrying out their role. As mentioned above, QS input and feedback into model design from an early stage can help improve the design of a model to benefit the QS.

Responses to this question also reflect a lack of understanding and skills in BIM amongst the QS profession in Ireland which must be addressed to allow an increase in the number of Quantity Surveyors using BIM.

## Increasing the use of BIM by the QS

Chart 14: Which of the following do you think are important actions to increase the use of BIM by QSs?



The majority of respondents believe it is very important that BIM is introduced as a key part of QS college courses in Ireland. This is echoed by respondents who also feel that more BIM training courses should be provided for the QS.

The development of guidance notes for designers on the QS requirements in BIM models was also viewed as an important action to be undertaken.

The SCSi QS BIM Working group will use results of this question, and the survey as whole, to insure that the correct steps are taken to help increase the understanding and adoption of BIM by the Quantity Surveying profession in Ireland.

# Recommendations/SCSI Actions

The results of this survey clearly point towards an increase in the adoption of BIM by the QS's in Ireland, and the plan for further adoption in the near future. Those who have already implemented BIM in their work have experienced its benefits, however many are still struggling to overcome the barriers to adoption. The SCSI therefore, plan to offer the required support, training and guidance for Quantity Surveyors, based on the feedback obtained through this survey, in order to help them successfully adopt and utilise BIM within their work practice through the following actions;

1. Provide support and guidance to members through the QS BIM Working Group members  
(Contact Details below)
2. Publish Guidance Notes on BIM for the Quantity Surveyor
3. Develop Guidance Notes for Designers on QS requirements in BIM models at various project stages
4. Organise CPD talks to explain the benefits and means to overcome barriers to adopting BIM
5. Arrange Training Seminars and Workshops on BIM

The SCSI/BIM Working Group will develop a BIM Strategy, setting out key goals and defined objectives in relation to increasing knowledge and use of BIM amongst QS members over the next 2 years.



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