**OLLSCOIL NA hÉIREANN, GAILLIMH**

**NATIONAL UNIVERSITY OF IRELAND, GALWAY**

Text of the Introductory Address delivered by **PROFESSOR MICHAEL HARTNETT,** National University of Ireland, Galway on 12 June, 2015 on the occasion of the Conferring of the Degree of Doctor of Engineering *honoris causa*, on **ÁINE M. BRAZIL.**

**A Uachtaráin, a Sheánsailéir, a mhuintir na hOllscoile agus a dhaoine uaisle……**

This University has honoured people from different countries and different walks of life; it is a pleasure to honour a Galway native. Áine Brazil, Vice Chairman of Thornton Tomasetti Structural Engineers, is a Galway native of exceptional talent and achievement.

Áine grew up in Salthill, and attended the local Salerno Secondary School, which she fully embraced through activities such as debating, sports and girl guides. Even then her interpersonal and leadership skills were obvious, and she willingly gave of her time to mentor younger girls.

For a young woman sitting the leaving certificate in the mid 1970's she certainly chose the road less travelled. She was one of 3 girls in her class who studied honours mathematics, facilitated on Saturday mornings by her maths teacher (Mrs. Scanlan, who is with us today). Áine then went on to study civil engineering here at UCG/NUI Galway.

Áine and her family have very strong links with this university, all of her siblings graduated from NUIG, and her mother worked here for many years.

On graduating, Áine's first job was with Ove Arup, the prestigious firm of Consulting Engineers, in London. Around this time another ambitious and gifted Irish engineer, Peter Rice RIP, was appointed Director of Ove Arup. There are many parallels between the careers of these two brilliant Irish engineers; both would go on to use their imaginations and inventiveness to help create novel structures around the world.

A few years later Áine completed a Masters Degree in structural engineering at Imperial College of Science and Technology in London (the only female graduate that year in her class). Now armed with more engineering knowledge she was ready to move again. With John, Áine's

boyfriend at the time (now her husband), she moved to New York in 1982, for 2 years!

Soon after arriving in New York Áine joined a 45-person engineering firm called Lev Zetlin - working overtime her first weekend. The firm, now called Thornton Tomasetti, employs 850 staff, with Áine as its Vice Chairman.

Throughout her career at Thornton Tomasetti, Áine has been responsible for the design and construction of nearly every building type, including high-rise offices, residential buildings, hotels and hospitals. High on the list of her accomplishments during her 30+ years of experience is the role she played in leading the structural engineering team for the design of 3 million square feet of high-rise office development in New York City's Times Square area.

She was the lead engineer when the New York-Presbyterian Hospital needed a 485-foot-platform in order to bridge the Franklin D. Roosevelt Highway and support a 12-story building above.

Hudson Yards, a 26-acre urban hub, is the genesis of a vibrant neighborhood and skyline in west Manhattan where currently there is none. Google ‘Hudson Yards’, you will be told:

It is the largest private real estate development in the history of the United States

It is the largest development in New York City since Rockefeller Center.

More than 24 million people will visit Hudson Yards every year.

It will include more than 17 million square feet of commercial and residential space, and 14 acres of public open space.

Áine's team is currently involved in the design of a groundbreaking skyscraper in Hudson Yards - New York’s first all-concrete commercial skyscraper.

The client’s representative for Hudson Yards said of Áine and her team: “People don’t tend to think of intellectual firepower when they think of structural engineers, but they should. What we do would be impossible without them.”

Áine and her team are also working on Kingdom Tower, Saudi Arabia. When completed in 2018 at over 1,000 metres high it will be the tallest building in the world.

In his acclaimed book ‘An Engineer Imagines’ Peter Rice states: “Pulling down is easy, building up is difficult”. Áine reflected these words years later when she said: “I make the buildings stand up and stay up. As an engineer, the last thing you want to hear about is a building falling down, but I don’t think it was until after 9/11 that the average person became aware that it was not an absolute fact that a skyscraper could stand up under any conditions.”

NUIG is not the first to recognise Áine for her achievements, nor, I suspect, will we be the last. Her accolades include:

Honorary Member Award, from the Structural Engineers Association of New York

Women of Influence Award, from the Real Estate Forum

Leader and Role Model for Young Women Award, from Girls Incorporated

Leader of Industry Award, from the Concrete Industry Board

Woman of the Year Award, from New York Women Executives in Real Estate

Inaugural International Engineer of the Year Award, from Engineers Ireland

Crain's New York Business named her as one of "New York's 100 most Influential Women in Business."

She is a Member of the Mayor's Commission on adopting the International Building Code for New York City.

She was the first president of the Structural Engineers Association of New York.

She is an Associate Professor at Princeton University.

Most of us take for granted that the bridge we are driving over will not collapse or that the skyscraper we walk past will not come crashing down. Tall buildings, withstanding storm and earthquake, remain standing tall due to the efforts, dedication and courage of gifted engineers such as Áine. She has pushed the boundaries of possibility, enhancing our living, working and visual environments.

Part of the iconic New York skyline has been created from blueprints drafted at Áine's drawing board; no mean feat – but considerable responsibility.

Áine also finds time to give back to her industry and the education system. She imparts her knowledge and experience to budding

engineers through lecturing at many colleges and universities, such as Princeton, Colombia and Cornell.
She contributes time to her *Alma Mater*, she is a Board member of Galway University Foundation.

Áine has a goal to provide inspiration as a role model for young women in engineering. In recent years she identified a need for a more proactive mentoring role, which led to the founding of W@TT (Women at Thornton Tomasetti). The group's mission is to promote the advancement of talented female engineers and to encourage their professional recognition within the industry.

I am sure Áine will be pleased to hear that about 70 Salerno girls took the Leaving Certificate honours mathematics papers over the past week.

In the words of Herbert Hoover, the 31st President of the United States: 'Engineering without imagination sinks to a trade'.

Áine Brazil's imagination inspires engineers to reach for the sky and she elevates the status of her profession.

**PRAEHONORABILIS CANCELLARIE, TOTAQUE UNIVERSITAS:**

Praesento vobis hanc meam filiam, quem scio tam moribus quam doctrina habilem et idoneum esse qui admittatur, *honoris causa,* ad gradum Doctoratus in Arte Ingeniaria, idque tibi fide mea testor ac spondeo, totique Academiae.