TRANSCRIPT
ESCHER X NENDO | BETWEEN TWO WORLDS

The following is an edited transcript of the NGV Multimedia Guide for *Escher X nendo* | *Between Two Worlds*, written by Phip Murray and narrated by Eddie Woo.

SECTION 1: EXHIBITION ENTRANCE
01 Welcome to *Escher X nendo* | *Between Two Worlds*

Hi, and welcome to the NGV. I'm Eddie Woo, a mathematician and high school teacher. You may have heard of WooTube, my YouTube channel where I give online maths lessons.

Today, I'm excited about exploring *Escher X nendo* | *Between Two Worlds* with you. This ground-breaking exhibition features the work of the Dutch artist M. C. Escher in dialogue with the work of the acclaimed Japanese design studio nendo. It's an exhibition not only for lovers of art and design but also for maths nerds, like me.

Did you notice a house motif in the cafe? You will see this house in every room of this exhibition. The entrance corridor features an animation; notice how the white lines resolve into the shape of a house. Oki Sato, the founder of nendo, has imagined this animation as a kind of metaphor for artistic genesis. Here, the ideas and forms are in a state of potential; they are just starting to resolve. Sato said: 'The animation shows the formation of the house shape evolving from sparks and lines, as if they are the lines of thought that form the baseline of the exhibition.'

Have a look around this corridor, then I will introduce this exhibition...

Today you will see 158 prints and drawings by M. C. Escher, an artist famous for his fantastical optical illusions. These works cover the whole of Escher's career, and are borrowed from the Gemeentemuseum in The Hague, which has the largest public collection of Escher's work in the world. In the exhibition, you will see some of the twentieth century's most iconic images. Soon, you will see the preparatory study for Escher's *Drawing hands*, 1948. The exhibition opens and closes with this motif – it's a fitting signature image for this exhibition.

Escher's work has traditionally been presented in a conventional exhibition format featuring prints and drawings in chronological order, but this exhibition is different. The NGV has invited the leading design studio nendo to create a spatially immersive exhibition design for Escher's art, encouraging an exciting new encounter with his work.

This exhibition is titled 'Between Two Worlds' because of the creative dialogue between M. C. Escher and Oki Sato. Escher and Sato are from different worlds; they are separated by time, place and culture. However, both are passionate about spatial manipulation; both delight in perceptual ambiguity and optical illusion, and this connects their works in exciting ways. In 1965, Escher described such interests nicely. He said:

> My subjects are also often playful. I cannot help mocking all our unwavering certainties. It is, for example, great fun deliberately to confuse two and three dimensions, the plane and space, or to poke fun at gravity. Are you sure that a floor cannot also be a ceiling? Are you absolutely certain that you go up when you walk up a staircase?
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> I ask these seemingly crazy questions first of myself – for I am my own first viewer – and then of others who are so good as to come and see my work. It's pleasing to realise that quite a few people enjoy this sort of playfulness.

Well, Escher – you have a fan in Eddie Woo. See you in the next room.

Here is a self-portrait by Escher, made when he was a young art student. There are three self-portraits in this section. Each of them contributes to an impression of Escher as a thoughtful and rather serious person – a teacher once described him as 'literary-philosophical'. Let's also remember, however, that he was a person who sought out humour, unorthodox ideas and delight. He once said: 'You have to retain a sense of wonder, that's what it's all about.'

Near here, you'll see a picture of Escher's 92-year-old father – or 'old Es', as he was called. Escher did not intend for this portrait to be sold; he made prints of it as gifts for family members.

This room has some of Escher's earliest works. Have a look around then I'll tell you about his family life.

Maurits Cornelis Escher was born in 1898, the youngest of five brothers. The family called him 'Mauk' or 'Maukie' for short. The Eschers lived in various towns in the Netherlands and enjoyed a prosperous existence thanks to Old Es's occupation as a civil engineer.

As a child, Escher was often unwell, even spending time convalescing in a children's home near the sea. His school years were a period of sheer misery. He was clearly bright but was ill-suited to the school system. He also struggled with his school's determination to make him right-handed at a time when left-handedness was seen as an abnormality. The highlight of Escher's week was art class, which is where his love of linocuts first emerged. His school years ended badly too: he did not pass enough subjects to obtain his school leaver's diploma. Old Es described how his son 'consoled himself by making a linocut of sunflowers'.

Despite his misery, Escher made lifelong friends at school. He also learned to play the cello – apparently badly. Escher described it as 'caterwauling'. Nonetheless, his lessons instilled in him an enduring love of music. He also enjoyed photography, using a camera given to him by his family.

Given Escher's interest in art, Old Es thought his son should become an architect. In 1919 Escher entered the School for Architecture and Decorative Arts in Haarlem. Within a few days, however, his graphic arts teacher, Samuel Jesserun de Mesquita, suggested that his talents lay more in the graphic arts, especially woodcuts.

From the beginning, it was art that brought Escher joy; however, it was by no means an easy pursuit. Writing to his son Arthur in 1955, he stated:

> Good God, I wish I'd learnt to draw a little better! Every once in a while the stress of it all drives me to the point of a nervous breakdown. It is really strictly a matter of persisting tenaciously with continuous and, if possible, pitiless self-criticism. I believe that to produce prints the way I do is almost strictly a matter of wanting so terribly much to do it well. Talent and all that are really for the most part just baloney. Any schoolboy with a little aptitude can perhaps draw better than I, but what he lacks in most cases is that tenacious desire to make it a reality, that obstinate gnashing of teeth and saying, 'Although I know it can't be done, I want to do it anyway'.

Escher first visited Italy in 1921 with his parents. He immediately fell in love with the country, especially the south. In 1922 he returned with some school friends. The image of San Gimignano you see in this room was made in that year. Approaching the town in a carriage, Escher was enchanted by the sight of the towers drawing nearer: 'It was like a dream,' he said, 'which could not possibly be real'.

For the rest of this stop, have a look around this room, which has many early prints made in Italy and Corsica…

Escher was bewitched by southern Italy. It brought him happiness. 'Rarely, if ever,' he wrote, 'have I felt calmer, more pleased, more content than in recent times.' Writing to a friend, he expressed gratitude for 'the absolutely new atmosphere in which I am living [and] the surprising, unexpected happenings and unfamiliar moods that are offered to me every day anew in this blessed place'. It was a period of great inspiration and industriousness – you can see the results around you. In 1922 Escher also visited Spain, taking interest in the tessellated patterns on the tiles at the Alhambra palace. In his diary he recorded his admiration for its 'great complexity and geometric artistry'.

In 1923 Escher fell in love. At a guesthouse in Ravello he met Jetta Umiker, the daughter of a Swiss industrialist. The family had owned a factory in Moscow but had recently fled following the turmoil of the Revolution. Over a few weeks Escher and Jetta grew close, until, as Escher said, 'I unburdened my heart to her. She was not too surprised and, what is more important, did not completely dash my hopes of a future paradise.'

In 1924 Escher and Jetta married and set up house in Rome. Here, Escher finally had a proper studio of his own. In 1926 their son George was born, followed by Arthur in 1928. For the next decade the family lived in Rome, supported by allowances from both families. In Italy, Escher's year followed a typical schedule: for two months in spring he travelled the country, making copious notes, sketches and photographs. Back in Rome, he would use this source material to create artworks for the remainder of the year.

In 1935 the Eschers felt compelled to leave Italy for Switzerland. George had been diagnosed with tuberculosis and was prescribed a stay in the mountain air. The political situation was also becoming untenable: Escher was appalled by a requirement that George attend school in the uniform of the Fascist Youth.

Leaving Italy caused Escher sorrow, but it may have resulted in an important turning point in the artist's career. You'll find out more about this soon.

Notice how this bench starts as a block and turns into the house motif? Oki Sato imagined this as a metaphor for Escher’s early period. This is how he explained it:

> This section features some of Escher’s early drawings and prints. Although relatively unknown, they are an important foundation for his later and more famous pieces.
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> In this house installation, a seemingly plain white rectangular block breaks up at its edges into house-shaped segments. The house parts gradually emerge from the rectangular base, symbolising Escher’s beginnings and the process of finding his voice as an artist.

Have a look – or take a seat – while I tell you about nendo.

Nendo is led by Oki Sato, who was born in 1977 in Toronto, to Japanese parents. He studied architecture at Tokyo’s Waseda University. In 2002, the year he graduated, he founded nendo in Tokyo. In 2005 he established a studio in Milan – both Italian and Japanese influences are important to his design approach.

In the field of contemporary design, nendo are celebrated for their sophisticated and visually witty designs that range across graphics, products, furniture, installations and interiors.

‘Nendo’ means ‘clay’ in Japanese, which gives an insight into Sato’s interest in malleability. It was the studio’s accomplished ability at spatial manipulation that inspired the NGV to commission nendo.

For this exhibition, nendo has not only created spatially immersive environments for each curatorial terrain, but they have also devised a new ‘nendo object’ – or house installation – in response to each room’s theme.

Escher was enchanted by nature: it gave him continual joy, inspiration and solace. His interest encompassed the vast, such as astronomy and space, as well as the tiny, such as the dragonfly pictured here, perched between a leaf and a flower. He said, 'I want to find happiness in the tiniest things – a miniature moss plant, 2 cm across, on a rock – and I want to try to copy these infinitesimally small things as precisely as possible.'

This room presents works made by Escher in response to nature. His close observation of the natural world provided a crucial foundation for his art. A detailed understanding of nature and its physical laws was absolutely necessary for the creation of the illusionistic work for which he would become famous.

Have a look around…

Nature offered a transcendent experience for Escher. One day, after walking in the woods, he wrote:

> I was particularly moved by the angelic life growing on the ground. I was so moved that I sat down, trying to flatten as few grasses and plants as possible with my clumsy backside. This brought my head quite close to the silent, joyful, exuberant, celestial flowers. They are so humble, so quiet. They just stand there, together, all by themselves in the huge stretch of woods and grow and bloom just the same, peacefully, joyfully, and silently.

In these first rooms, you have seen Escher experimenting with different styles, including Cubism, Realism, Art Nouveau, and Symbolism. He also explored printmaking techniques including linocut, etching, lithography and, most of all, woodcut. Escher also explored techniques from Japanese woodblock prints. Old Es had worked in Japan in the 1870s, and Escher took great interest in his father's collection of woodblock prints. The flat, patterned areas – or 'screens' – in Escher's works are reminiscent of Japanese compositional techniques that emphasise flatness, rather than the classical western technique of rendering depth through one-point perspective.

Escher was dismissive of his early works; he called them 'finger exercises'. However, many qualities for which he would become famous are evident here. As you go out, look at *Flor de Pascua*, 1921. Escher made these woodcuts at art school. Here, in nascent form, are motifs that will become critical in his art. Look for mirror images, crystal shapes, interlocking patterns, and even a glass ball reflecting an image of Escher.

Escher was entranced by reflective surfaces. This room presents images in which he creates optical illusions using the reflective properties of glass, water, his own eye, or – as seen here – a spherical mirror. This image is one of a number of self-portraits that depict Escher reflected in a mirrored ball. As you peer in, you will see him sitting in the family's apartment in Rome.

Have a look around…

In 1935 the Escher family left Italy. They resided briefly in Switzerland and Belgium before settling in Baarn, near Amsterdam. Escher would live there until 1970. Escher's time in the Netherlands is regarded as the key period for the consolidation of his visual language. It was after 1935 that he created his most iconic images and his artistic reputation flourished. And, yet, as you have seen, Escher's interest in key motifs – such as reflection and unusual perspectives – began in art school and continued through his Italian period.

For instance, Escher's first explorations with mirrors took place in Rome. In this room, you will see a still life that depicts Escher's dressing table, toothbrush and all. The scene includes a tilted mirror that reflects a laneway in an Italian town. It's an impossible image: the street would have to be in the room for it to be depicted as such, but somehow in this image Escher makes the impossible possible.

This section of the exhibition celebrates Escher's inimitable ability to create optical illusions using reflection. One area has a showcase with images in which Escher explores the complex properties of water. Nendo has designed a wonderful horizontal showcase for these images, just as if they were floating on a pond.

In this case, you will see *Puddle*, 1952. This image offers an optical illusion: we look both down and up at once. Part of the image depicts muddy ground with tyre tracks and footprints. However, the water pooled in the middle offers a much vaster view: reflected there, beyond the tops of the trees, are the moon and the vastness of space.

The notion of 'spatiality' was something profound for Escher. As you continue through this exhibition, you will see him play with space in incredibly inventive ways. I'll finish this stop with a quote. In 1964, he wrote to his son George:

> On the train to Utrecht I was suddenly overwhelmed and enormously moved by a sky full of clouds at different levels. I experienced a sense of space and three-dimensionality such as I'd not experienced for a long time. It's possible to become suddenly aware of these things, even in an over-populated country like Holland. Provided that you are looking up, you'll suddenly see that timeless and unbounded eternity. Do you think it's silly, or can you imagine what I mean?

In this stunning work by nendo, a three-dimensional outline of a house is created from light and shadow. Sato said that his inspiration for this work came from Escher's fascination with reflective materials, especially their ability to add another dimension to reality. It also responds to Escher's works on water, which sit nearby – the light moves along it beautifully, like ripples of water.

To create it, nendo took a mirrored surface and used a laser to cut shapes in it. When the surface is struck by light at a specific angle, a complicated interplay of reflections reveals, like magic, the shape of a house. It's where the light and the shadow meet, between the two mirrored surfaces, that the single house image is created. It's classically nendo: both simple and complex at the same time.

Have a wander around…

Notice how this gallery is designed symmetrically; one side is the mirror image of the other, an effect emphasised by the mirroring of the house-patterned flooring in the central case.

Rather than create a straightforward exhibition design, Oki Sato has created environments that ask us to think differently about how we might encounter art. Here is a quote from Sato on the design process:

> For each category, we had a similar process: learning the artworks, recognising the connecting thread, thinking how this idea can be expressed using the house motif, and [then] adapting it to the space and back to the artworks.
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> In some situations, these house elements serve a practical role in the exhibition design, like for sitting or as a display system. In other places, they are the object of display. In some galleries, you look at the houses, and in some you walk through them. In this way, the borderline between the display and the subject of display is blurred.

There is an elegant simplicity to nendo's works. Part of the studio's process is to set constraints, such as limiting the form to a single house motif or using only black, white and grey. These constraints enable nendo to push ideas with breathtaking inventiveness. This is how Oki Sato explained it:

> Generating new ideas for different projects is a very big part of nendo's practice. We gather ideas from everyday life and daily routines, and use them as points of departure for the projects we are working on. The ideas emerge from small moments that all of us experience but rarely notice, and when we develop them into objects and interiors we are aiming to achieve relatable and at the same time exciting experiences.
>
> You could compare our process to cooking. We use our design tools to mix conceptual ingredients. In each project we are playing with this process to create new experiences
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> For this collaboration we felt that an interesting approach would be to focus on the different aspects between our work and Escher's.
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> As we share similar interests, we felt that exciting moments could occur if we deliberately focused on the differences – like an explosive chemical reaction when mixing reactive components.
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> For example, the fact that Escher expressed three-dimensional contents in two-dimensional techniques, and we usually do the opposite – has inspired us to maintain this relationship throughout the exhibition.
>
> In the process of conceptualising and designing this project, we adopted Escher's tool box. This led us to create new work inspired by his mathematical and logic-based approach.

Isn't the view in this room breathtaking? This long gallery is devoted to one of Escher's greatest obsessions: tessellation. Tessellation means a pattern that repeats leaving no gaps between the forms. Escher invented his own name for this technique: he called it 'Regular Division of the Plane'. It was a life-long passion that Escher explored in more than 130 drawings and 60 prints. In 1967, reflecting on his life, he described tessellation as a 'particular urge'. 'I just couldn't stop doing it,' he said.

One of Escher's most famous images is in this room. *Day and Night*, 1938, presents a birds-eye view of the flat, water-logged Dutch landscape. White birds fly into night-time, while the black birds greet the day. The image is perfectly symmetrical: look how the river and village mirror each other. The only difference is that more people mill about in the day-time scene, while the glowing windows of the night-time scene suggest that everyone is cosy inside. It's a lovely detail. The image morphs seamlessly between the white and black birds, and between night and day. The image is also suggestive of infinity; the birds will ultimately meet up, forming an endless cycle.

The idea of life-cycles must have loomed large in Escher's life around this time; just after *Day and Night*, 1938, was finished, Escher's third son, Jan, was born, and a few months later, Old Es passed away, a loss that Escher keenly felt.

Day and Night is an example of Escher's scene-based tessellations – he called them 'story pictures'. These images transition from the flat to the spatial, and they often tell a story. Other examples on this floor are *Metamorphosis*, 1937, and *Reptiles*, 1943.

Have a look around…

Regular Division of the Plane is arguably Escher's most important and beloved technique. This is because it was an artistic language that enabled him to explore ideas of eternity and infinity. These tessellated patterns could repeat forever on a flat plane or, alternatively, return back on themselves in an infinite Mobius loop.

The Regular Division of the Plane held metaphysical importance for Escher. He saw in it a kind of ordering principle for the universe, and this brought him comfort. Writing about the Regular Division of the Plane he said:

> Repetition and multiplication – two simple words. The entire world perceivable with the senses would fall apart into meaningless chaos if we could not cling to these two concepts. How desperate and unacceptably pitiless does the world appear to us as soon as we lose sight of them. We have to thank these two concepts for everything we love, learn, recognize and accept. All the marvellous, incomprehensible, splendid, enchanting laws that surround us are dependent on them. The entire world is maintained by them. If we should lose them, at that instant the universe would break apart like a bomb.

Can you see a row of four houses with black exteriors transforming into a row of five house with white exteriors? Nendo has created this house installation in homage to Escher's obsessions with the Regular Division of the Plane and the concept of metamorphosis.

This incredible installation is designed to be explored from different vantage points. Up here you are afforded a more two-dimensional view. The installation appears more as an image, and you can work out the logic behind it. From here, you can see how the roofs of the houses gradually open to form houses themselves. The house exteriors at the front become interior spaces at the back. This metamorphosis also changes the houses from black to white.

When you are ready, start to walk down the slope. As you descend, your vantage point will continually change. Finally, on ground level, you will be free to walk inside and around the houses. Oki Sato imagines that it will feel like you are stepping into a two-dimensional picture. A drift between two-dimensions and three-dimensions was important to Sato's design. He said: 'Escher practiced three-dimensional expressions in two-dimensional techniques. nendo tries to bring two-dimensional elements into three-dimensional objects and space.'

Walk down, then I'll tell you more about Sato's desire to build 'A house for Escher'…

For Sato, the house is symbolic of space itself; it is a basic spatial unit that is universally understood. Sato has used a simplified version of a house – it reminds me of the house icon from Monopoly.

This is what Sato had to say about the house as a motif:

> Many of Escher's prints use a hero: it might be an animal, a fictitious insect, or a person. These main characters assist in conveying the concept of the work to the viewer in a way that is relatable. In this exhibition design, the house motif plays the same role. The house is an icon and a symbol of 'space' that many people understand. This simple shape can convey various concepts, such as exterior and interior, changes in dimensions, perspective and scale. The house can also evoke emotions, such as longing and nostalgia. When I was invited to design a space for Escher, I thought about a shape that could contain and convey all the layers and complexities of this exhibition. I thought that this house motif would serve as a good 'house' for Escher.

This plinth offers you an Escherian masterclass in Regular Division of the Plane. As you walk along, you'll see Escher working out how to regularly divide a two-dimensional surface using an ingenious diversity of patterns. As a mathematician, I understand the maths behind tessellation, but Escher's creativity boggles my mind…

Initially, Escher worked intuitively. He said,

> In the beginning, I puzzled quite instinctively. I was simply driven by the irresistible pleasure I felt in repeating the same figures on a piece of paper. I had not yet seen the tile decorations of the Alhambra and never heard of crystallography, so I did not even know that my game was based on rules that have been scientifically investigated.

Escher defined the Regular Division of the Plane like this. He said:

> Imagine a plane extending without boundaries in all directions. This plane can be filled or divided into infinity, according to a limited number of systems, with similar geometric figures that are contiguous on all sides without leaving 'empty' spaces.

Escher would say that the simplest example is the square tile. Think of your bathroom tiles – they could be continued forever with no gaps between them. Escher then extended this principle in highly imaginative ways. He was addicted to creating such image-puzzles. As he worked on them, he said, 'a fascinating game emerges,' because this technique 'affords the artist infinite possibilities yet also confines [them] to the limitations imposed by the rules of play.'

As you can see, Escher preferred to use recognisable subjects, like lizards, fish or human figures. This contrasts with tessellations in nature – like crystals – or those that Escher admired at the Alhambra palace, which explore abstract patterning. Escher thought that familiar imagery added important narrative potential. The little creatures also exerted a power over him. He said, 'While drawing, I feel as if I were a spiritualistic medium, controlled by the creatures that I am conjuring up, and it is as if they themselves decide on the shape in which they would like to appear.'

This is a musical stop. Escher loved music, especially the music of J.S. Bach, which inspired in him, he said, 'an irresistible urge to make images'.

Bach's music and Escher's images share formal qualities. Both artists work with complex repeating patterns. Around 1741, Bach published the *Goldberg Variations*. This long and complex piece for keyboard explored thirty different variations of the one line. Bach intended it as a display of compositional brilliance and technical virtuosity. Just like Escher's Regular Division of the Plane, Bach's Variations offer ingenious diversity while working within a strict rule.

Escher adored the *Goldberg Variations*. In 1965, Escher was to be awarded a cultural prize, presented, as he said, 'with a lot of pomp and circumstance'. He wrote of the ceremony:

> What pleased me even more was that I was allowed to choose who would play the accompanying music. Without a moment's hesitation, I chose Janny van Wering to play her harpsichord. She is actually willing to carry out my dearest wish and play the twenty-fifth of the Goldberg Variations for me – in my opinion, the most beautiful of them all. She will be playing three or four times during the event, nothing but Bach, all at my request! The actual prize is nothing to me, compared with all this.

Look in and around the nendo houses – you'll find works by Escher placed among them.

Welcome to the space and illusion room. Prepare to be astonished!

Nendo has created a spatial design full of visual surprises. It's a perfect environment for viewing works by Escher exploring space and illusion. This is how Oki Sato explains it:

> In this space, Escher's artworks are displayed using a system of metal rods. These rods appear to be placed in a clutter but, when looked at from a specific angle, a house shape appears created from a combination of different parts. This design responds to Escher's interest in extreme perspectives.

There is also a mirror placed in the centre of this display. The mirror reflects the metal rods, making the space seem endless. This design responds to Escher's interest in spatial manipulations. Near the entrance, a group of works transmit Escher's delight in the way a flat, two-dimensional piece of paper can depict a three-dimensional world. He was fascinated by the brain's ability to perceive depth on a flat surface. You'll see an image called *Balcony*, 1945, in which part of a Maltese town bulges out in a spherical magnification. Escher said:

> In our three-dimensional space the two-dimensional is every bit as fictitious as the four-dimensional. Curiously enough, we still go on, as we have done since time immemorial, producing illusions of space on just such plane surfaces as those. Surely it is a bit absurd to draw a few lines and then claim 'This is a house.' This odd situation is the theme of *Balcony*.

In this room, Escher encourages you to marvel at drawing's ability to give the illusion of a three-dimensional world. For instance, an image of three spheres performs an amazing sense of roundness and depth, all rendered on a flat plane. Elsewhere, a little dragon appears to stick its head out of the paper.

Many images in this room involve visual and spatial conundrums. Such images provoke what some call an 'Escherian double-take': at first glance, everything looks normal, but then you notice the oddities. In *Convex and Concave*, 1955, Escher has created an impossible scene: stairs run both up and down; the interior is also an exterior; the floor is a ceiling. The figures playing flutes or going up ladders are part of the same image, but they will never be part of the same universe.

Have a look around…

Other images here explore extreme perspective. If you suffer from vertigo take care around *Tower of Babel*, 1928. This image gives you a dizzying sense of looking down from an awfully great height. Elsewhere, *Other world*, 1947, gives us three different views of the moon and space from the same building. Escher has combined three different vanishing points in the same image: he warps space and time playfully and, it seems, with the greatest of ease.

To enable these illusions, Escher knew that the images had to appear normal. He said:

> If you want to draw attention to something that cannot possibly exist, you have to try to fool firstly yourself and then your audience by expressing what you have to say in such a way as to cancel the element of impossibility. There has to be something unfathomable about it, something that is not immediately obvious.

This mix of the normal and the unfathomable is a hallmark of Escher's career, and it's the secret to the 'Escherian double-take'. And, yet, despite his virtuosic ability to manipulate space, Escher maintained that space was a great mystery. He said:

> We do not know space. We do not see it, we do not hear it, we do not feel it. We are standing in the middle of it, we ourselves are part of it, but we know nothing about it, I can measure the distance between that tree and myself, but when I say 'three metres', that number reveals nothing of the mystery. I see only boundaries, markings; I do not see space itself. The prickling on my skin caused by the wind blowing about my head is not space. When I feel an object with my hands, it is not the spatial object itself. Space remains inscrutable, a miracle.

This house-shaped corridor was one of nendo's formative ideas for this exhibition – it was a catalyst work for their whole design. You can see why: it's enormously playful and delightful, giving us a spatial thrill. Will you vanish as you walk down? Or, have an Alice in Wonderland-style shrinking experience?

Oki Sato has titled this work *Zooming house*. He said:

> Inspired by Escher's use of perspective and optical illusion, we have converted a connecting corridor into a house-shaped path that becomes lower and smaller as you move through it. At the entrance, the height of the path is four metres; at the end, it is only 55 centimetres, so the path becomes an optical illusion – it looks much longer than it is in reality. The interior features an alternating black and white pattern that decreases in size. This pattern emphasizes the extreme perspective.

The next gallery also features a nendo work. *House of movement* is a multimedia work projected onto a three-dimensional patterned surface, which create an optical illusion. The work fluctuates between the two-dimensional and three-dimensional. It was inspired by Escher's interest in geometry. As you walk through, consider Oki Sato's thoughts on his invitation to respond to Escher's works:

> Although it is a privilege to collaborate with Escher, I would not necessarily say it was the specific connections between our work that has drawn me to this project. It's more the fact that it is a completely new idea to set up a collaboration like this between two creators, especially when one is a graphic artist and the other a designer. I find projects to be most exciting when it is difficult to predict how they will end, and this was an exciting opportunity to create something that has never been done. To design an exhibition, create new content and respectfully present another artist's story is a great challenge.

Contrast (Order and Chaos), 1950. In this work Escher compares order with chaos. See the central object? It's a stellated dodecahedron encased in a glass sphere. This arrangement is a vision of perfect order and symmetry. Around it are pieces of broken glass, crumpled paper, and other busted objects: they represent chaos. In his life and art, Escher sought simplicity and order. Both were important to his peace of mind. He said: 'In my prints, I try to show that we live in a beautiful and orderly world and not in a chaos without norms, as we sometimes seem to.'

This room contains Escher's works depicting crystals and also Platonic solids – they were named after Plato; the dodecahedron is an example. In such natural phenomena Escher found support for his belief in an underlying order to the universe.

Have a look around…

Initially, Escher created his artworks in an intuitive manner; however, as his career progressed, he came to understand how mathematicians working in crystallography had derived the formulae that he used for his tessellated works. He said: 'Mathematicians have theoretically mapped out the regular division of a plane because this is part of crystallography.' He also discussed these ideas with his half-brother Berend, a professor of geology who published books on mineralogy and crystallography.

Escher failed mathematics at high school – I bet he had a bad teacher! Nevertheless, his images clearly demonstrate an exceptional intuitive ability in mathematics.

For these works exploring crystals and other geometric shapes found in nature, nendo has created a faceted and sublimely illuminated room, almost like a chapel. The room encourages a sense of wonder and provides the perfect environment for exploring phenomena that are not only extremely logical but also highly mystical.

Lastly, don't miss *Curl-up*, 1951. It features a reptilian creature that Escher called the 'curl-up', or, more hilariously, the 'sausage roll'. He invented the curl-up, he said, 'as a result of dissatisfaction concerning nature's lack of any wheel-shaped living creatures endowed with the power of propulsion by means of rolling themselves up'. Escher has certainly addressed this lack!

Isn't this a spectacular vision! Walk around and explore this chandelier from different vantage points.

This room is titled 'Infinity and Impossible Worlds'. It explores Escher's preoccupation with the infinite and his interest in spatial paradoxes. In response, nendo has created this exquisite installation, in which the house motif materialises in the air, like a ghost or hologram.

Nendo responded to Escher's interest in infinite shapes and forms by creating a round room with this circular 'chandelier' at the centre. The chandelier is five-metres in diameter and features more than 50,000 suspended die-cut house icons. As you can see, the house icons are painted black on one side and white on the other. In the centre, a group of house icons are inverted, and this creates the illusion of a larger house floating in the centre. When viewed from one side, a black house appears to float in the middle of a white installation; from the other side, a white house floats in an expanse of black. Nendo are celebrated for an ability to create visually and spatially playful designs. The idea of delight is key in their practice.

Here, before your very eyes, water flows both up and down. Escher got the idea for *Waterfall*, 1961, from the Penrose triangle. He had seen a diagram of one in an article entitled 'Impossible Objects: A special type of visual illusion' by father and son mathematicians Lionel and Roger Penrose. The Penrose triangle is possible to draw but impossible to create in three dimensions. The preparatory drawings nearby give insight into the principles behind this visual conundrum. You can see Escher working through the complexities required for this image.

Escher's enduring love for Italy is in evidence here too: the landscape in the distance was inspired by southern Italy. Notice, too, the weird plants at the bottom left. They were modelled on tiny moss plants, just a few millimetres high. Escher has hugely inflated their scale to make these otherworldly forms. Escher has also adorned the tops of this structure with two polyhedra that recall the dodecahedron that you saw earlier.

Waterfall, 1961, is one of Escher's impossible buildings. Many images in this room depict impossible buildings and explore spatial paradoxes. These images make us question our own eyes and our understanding of the laws of physics. For instance, in Belvedere, 1958, the ladder appears to be both inside and outside. It is wonderfully confusing.

Have a look around…

This room also explores Escher's preoccupation with infinity, which is expressed through various motifs, such as *Waterfall*'s endlessly flowing water or the Möbius-strip configuration in his image of red ants. In the image *Bond of Union*, 1956, you will see a double portrait of Escher and his wife Jetta in which they are joined in a single, continuous ribbon. We are able to see both the inside and the outside of their heads at once, and they are surrounded by the vastness of space, in which spheres float around and within them. The image speaks of enduring love, perhaps, but also of infinite time and space. From a very young age Escher was enthralled by astronomy: as a boy he would spend hours stargazing through the telescope that Old Es installed on the roof.

Escher was fascinated by the concept of infinity. He said:

> Human beings can't imagine that the stream of time could ever come to a halt. It seems to us that time will continue to flow on eternally – even though the earth will cease to revolve around its axis and the sun; even though there will then be no days and no nights, no summers and no winters.

Neither can we conceive that somewhere behind the furthest stars in the night sky there exists the end of space and a boundary behind which there is 'nothing'.

It was for such ideas that Escher became beloved of the 1960s generation. His mind-bending images were prized by Californian hippies as expressions of psychedelic art, leading to the mass unauthorised production of day-glo versions of his prints. In the 1960s, Escher's reputation flourished: the magazine *Rolling Stone* ran a story on Escher, and Mick Jagger invited him to contribute artwork for a record cover. Escher declined, allegedly asking, 'Who is this Jagger person?'. He also declined an invitation from Stanley Kubrick to work on what he called a 'fourth-dimensional film', probably *2001: A Space Odyssey*. Escher preferred to focus on his own visions. He led a relatively quiet, structured life. Aside from a daily walk, his days were spent in a studio at the family home. There, with the blinds drawn to control the light, he undertook the meticulous work of creating and printing his images.

While Escher found admirers in popular culture and mathematics, the mainstream art world largely reserved its interest. His work did not align with the dominant movements of the mid-century, such as Abstract Expressionism, and for decades he was regarded as an artistic oddity. Escher himself did not necessarily self-identify as an artist; he described himself as a graphic artist working in an unorthodox manner. In 1958, he said, he was working in 'refreshing, but oppressive, loneliness': He continued:

> It remains for me an open question whether the Regular Division of the Plane belongs to the domain of mathematics or to that of art. If it may be considered art, why is it that, as far as I have been able to determine, no artist has ever occupied himself deeply with it? Why am I the only one that is fascinated by it? Never have I read a word by any artist, art critic or art historian about the subject that we are discussing here … What fascinates me, and what I experience as beauty, is apparently considered dull and dry by others.

This marvellous serpentine path is leading you to Escher's final masterpiece, entitled *Snakes*. It's a work of extraordinary technical and conceptual virtuosity.

In the last decade of his life, Escher endured serious illnesses and major operations. When able, he devoted his time to working on *Snakes*, which was completed in 1969 and which he rightly understood to be his last work. He celebrated any ability to continue working: 'I am extremely satisfied,' he said, 'because my hand doesn't shake at all and my eyes are still good enough for such precision work.'

Snakes is indeed extraordinarily precise. Escher used a magnifying glass fitted with a neon tube to assist in creating the fine detail. The image is also technically demanding to print. While many print-makers employ a specialist studio to produce their prints, Escher undertook his own printing, working from a home studio. *Snakes* was printed using one 'pizza-slice' section, which he repeated three times to create the full circle. To create the image, he used three separate blocks in green, orange and black. This print is slightly unusual among Escher's works: the interlocking rings diminish in size both inwards towards the centre of the circle, as well as outwards towards the edge.

In 1970, the year after *Snakes* was completed, Escher moved to a retirement home for artists. He died two years later, at 73 years of age.

At the end of this gallery, you will see a final Escher work: the finished print of *Drawing hands*, 1948, which we saw as a pencil sketch at the beginning. The image shows Escher's right hand drawing his left hand, and vice versa. It encapsulates many of the paradoxical ideas for which Escher is now much loved: infinite cycles, three dimensions represented in two, and a sense of unending delight in the creative process. In 1956 he wrote to a friend: 'Maybe I focus exclusively on the element of wonder, and therefore I also try to evoke only a sense of wonder in my viewers.'

The last section of this exhibition is the nendo gallery. Oki explains:

> The final section of the exhibition is a new object collection based on the ideas we developed throughout the design process. This eleven-piece collection is made from black-and-white painted metal. It explores multiple mutations of the house icon, where we push the form to achieve a range of outcomes.

This brings us to the end of the tour. I'm Eddie Woo. Thanks for joining me today. I hope you found it an inspiring experience.