

Bright, green & beautiful

Caroline Keenan and Robbie McDonald have built an exciting, eco-friendly family home.

STORY: **DEBBIE JEFFERY**



“We never planned to build our own home, but finding somewhere affordable to live in Gloucestershire was proving impossible,” explains Caroline Keenan. “When a 1950s bungalow on a beautiful site was drastically reduced in price we decided to buy it to replace with a brand new house.”

Originally the 1950s bungalow had been on the market for £375,000, but surveys revealed that the single-skin concrete walls were constructed in such a way that securing a mortgage on the property would prove impossible. The value therefore decreased to just £150,000, and Caroline and Robbie were able to use the proceeds from their previous house sale to purchase the bungalow, which enjoyed fabulous views across open fields.

The couple and their three sons – Rory, now 14, Oscar, 11 and Angus, nine – then lived in four different rental properties

while their new home was being designed and built. “We’d renovated houses before but had never built anything from scratch, so employing a good architect and builder was vital,” explains Caroline, a solicitor. “We were extremely lucky to find such an amazing team of people.”

The couple researched various architects online and were impressed by Millar Howard Workshop – a dynamic young practice based in the heart of the Cotswolds which was founded by Tom Howard and Tomas Millar in 2003.

“They sat down and talked to us for ages, and we showed them pictures of houses we liked,” says Caroline. “We had a very good relationship with them and they immediately understood what we wanted to achieve, such as including plenty of storage for toys.”

Tomas and Tom worked with the family to devise a sustainable, four-bedroom home which would be built using locally



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The exterior

The two-storey contemporary family home was designed to replace a bungalow that had reached the end of its life. Slate, zinc, local stone and larch cladding combine to create a house that fits perfectly with its beautiful surroundings. The UK’s first Passivhaus-certified windows were purpose made for the property by Custom Precision Joinery using Welsh timber.



At a GLANCE

BOUGHT FOR £150,000 | **SPENT** £420,000 | **VALUED AT** £750,000



OVERVIEW

Caroline and Robbie decided to buy a 1950s bungalow on a beautiful site after it was drastically reduced in price from £375,000 to £150,000 due to lenders' reluctance to offer mortgages on single-skin concrete construction. The couple always planned to replace it with a contemporary-style eco family home.

CONTACTS

Project

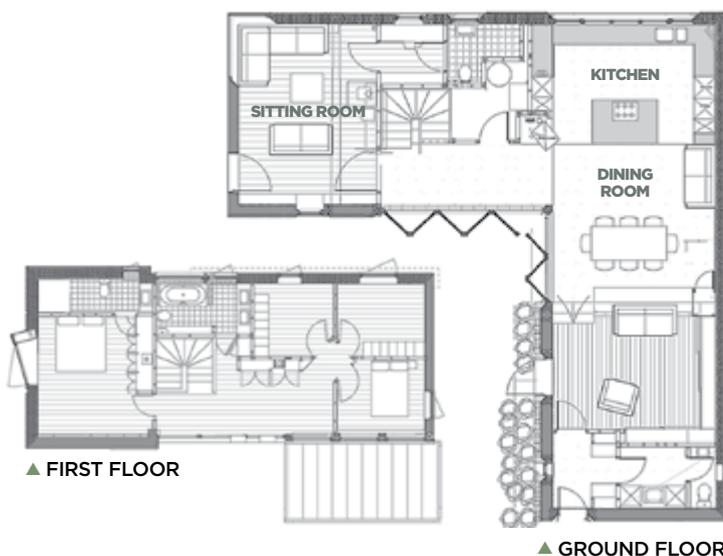
Architect Millar Howard Workshop Ltd: mhworkshop.co.uk
Main contractor Greenheart: greenheartuk.com

Structure

Stone walls Bidmead & Co: bidmeadstone.co.uk
Insulation Warmcel: warmcel.co.uk
Triple-glazed windows and bifolds Custom Precision Joinery: cpjoinery.co.uk
Reclaimed slate and other materials Winchcombe Reclamation: winchcombereclamation.co.uk

Fixtures & fittings

Kitchen Coloro: 01942 717839, coloro.co.uk
Grass and daisy bathroom flooring Harvey Maria: harveymaria.co.uk



THE FLOORPLAN

The 194 sq m house has four bedrooms and three bathrooms, with a first-floor landing doubling as a spacious play area, overlooking the open-plan kitchen/dining room below.

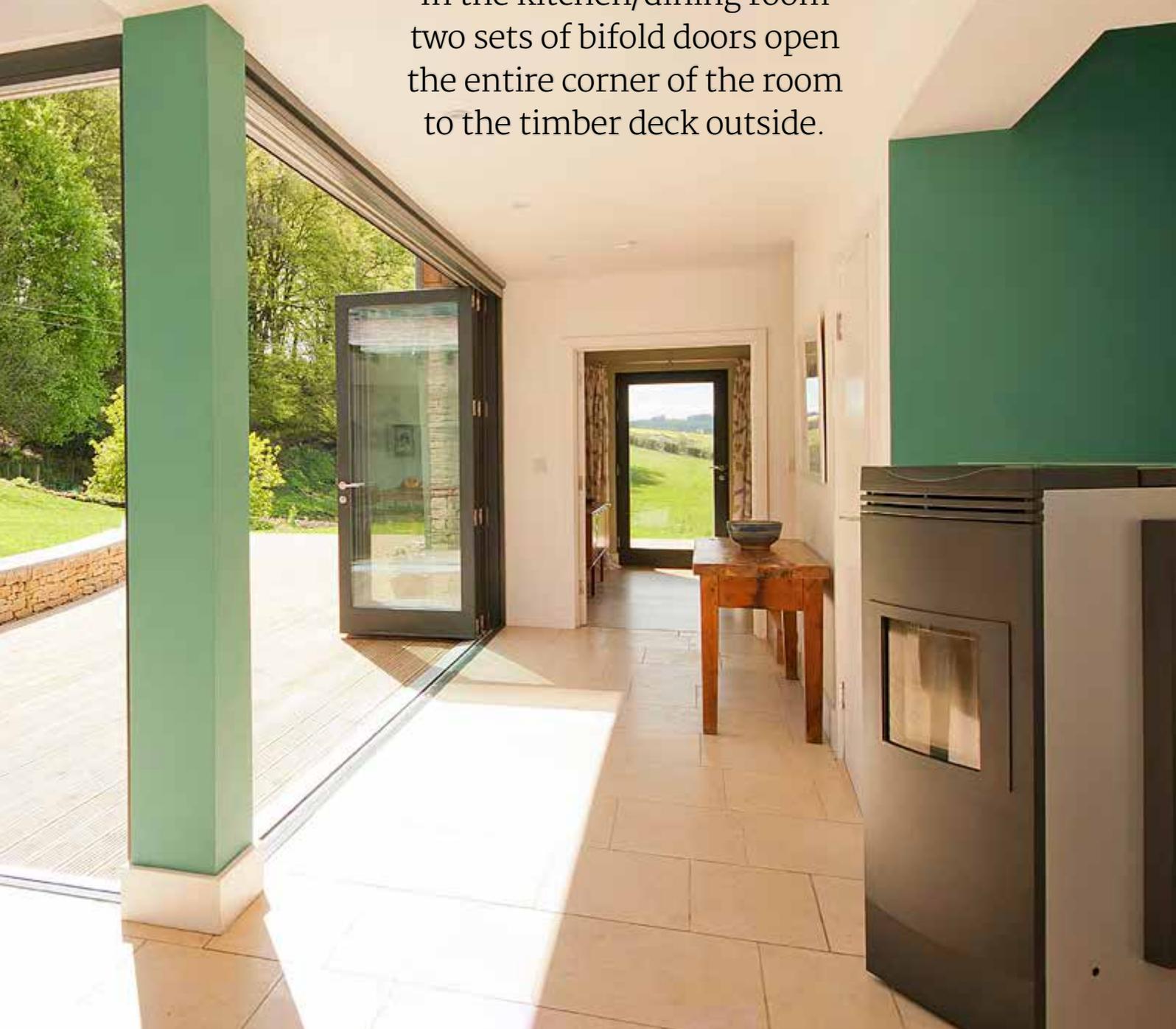


sourced materials. “Our neighbours wanted the house to look like a traditional Cotswold cottage, but we preferred the design to be much more organic and to blend into the landscape, especially when viewed from across the valley,” says Caroline.

Models produced by the architects illustrated how best to orientate the new house to maximise passive solar gain. Simply by changing the angle of the building by 16 degrees guaranteed that it would benefit from far more direct sunlight, creating brighter interiors and ensuring that solar thermal panels work efficiently to heat the hot water.

Despite the fact that the bungalow was fairly modest in size there were two large glass-houses and a double garage on the site which were included on the registered title. The planners allowed Caroline and Robbie to combine the size of the bungalow and outbuildings, and then added a further 10 per cent to calculate the maximum size of the replacement house.

In the kitchen/dining room two sets of bifold doors open the entire corner of the room to the timber deck outside.



Robbie is a professor of ecology, wildlife management and environmental sciences at Exeter University, and both he and Caroline were keen that their new home should be energy efficient.

They chose as the main contractor Greenheart Sustainable Construction – a partnership specialising in environmentally responsible, energy-efficient building. “All the materials were ordered and delivered exactly when they were needed, and the whole build was extremely well organised with detailed cost breakdowns,” says Robbie.

Deep-piled foundations were required for the sloping site, which necessitated drilling down 30m to reach bedrock. The process literally shook the entire village, and neighbours grew so worried about their properties being undermined that a surveyor was brought in to allay their fears.

“We wanted to try to make the house as sustainable as possible, and considered using SIPs, ◆





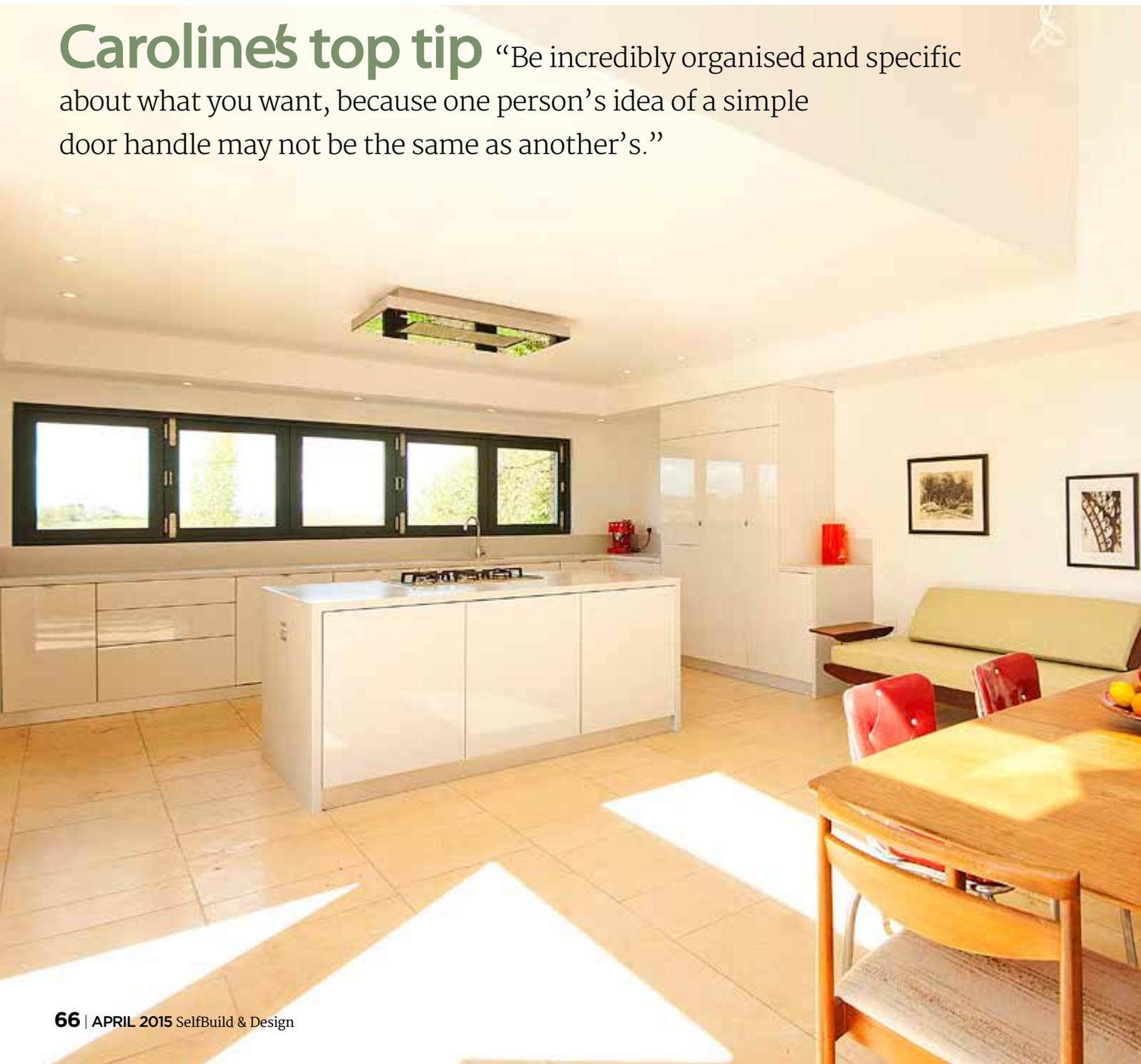
but Greenheart explained that bringing such large panels down the hill would be difficult, and suggested stick building the timber frame on site instead,” says Robbie.

Roofs are finished in a combination of reclaimed natural slates and zinc, with both pitched and flat profiles, and externally the contemporary building has been clad in a combination of Cotswold stone and larch.

Some of the larch has been attached horizontally and charred to a darker colour, so that the blackened timbers imitate the bark of surrounding trees. The carbonising process releases natural resins that form a protective lacquer and make the wood resilient and resistant to insects and fire.

Framing the views was essential, and each window has been perfectly angled to capture the best possible vistas. A long bifold window above the kitchen sink looks out across the valley, and the main bedroom features an angled window overlooking nearby woodland. In the kitchen/dining room two sets of bifold doors open the entire corner of the room to the

Caroline's top tip “Be incredibly organised and specific about what you want, because one person’s idea of a simple door handle may not be the same as another’s.”





timber deck outside, with high-level windows and rooflights drawing light into every part of the house.

Triple-glazed, argon-filled glass helps to achieve a high degree of airtightness, and the timber-framed building is extensively insulated with Warmcel recycled newspaper in both the walls and roof. Three solar thermal panels mounted on the roof supply hot water, and the heating is fuelled by a wood-pellet stove enhanced by a mechanical ventilation and heat recovery system. With an airtightness target of 2.0 air changes per hour everyone was extremely pleased with the final building test reading of 1.6.

“Plumbing was the only trade that didn’t come through Greenheart, and although the company we chose produced a competitive quote for the work they didn’t fully understand the technology, which caused a number of problems with the heating,” says Caroline. “Once it was correctly installed the whole system worked amazingly well though, and the house maintains a constant temperature of 16C without any heating, even if



The kitchen

Bespoke cabinets have been fitted with hard-wearing Corian worktops in the kitchen, where limestone flooring is laid over underfloor heating. The efficient wood-pellet stove is on automatic feed and only turns on when required.

“Our total running cost for the first year was just £250, including electricity.”

it’s freezing outside. Our total running cost for the first year was just £250, including electricity.”

Caroline and Robbie purchased fixtures and fittings for the house themselves, and tried to ensure that everything was sustainable and came from Britain, including beautiful limestone flooring from Lincolnshire for the open-plan kitchen/dining room. Bespoke cabinets teamed with hard-wearing Corian worktops were designed with the architect, and made to order for a fraction of the price of buying a standard kitchen.

“I don’t like small wall cupboards above work surfaces which can’t hold enough, so instead we have pull-out shelving in tall cupboards,” Caroline explains. “After living in so many rented houses we wanted plenty of storage so that everything could be kept as clean and minimal as possible.”

The three boys all had firm ideas about their bedrooms, which incorporate high-level platforms and have been decorated in bright vibrant colours. Rory’s room features yellow walls, with a deep blue ceiling inspired by the Savanna, and Oscar and

Sitting room

The spacious sitting room has far-reaching views and has been painted in a soft green colour.





Upstairs

ABOVE: Rory's bedroom colour scheme of dark blue and yellow was inspired by the African Savanna.

LEFT: A sheet of toughened glass was made into a bespoke shower screen in the en suite bathroom, where daisy vinyl flooring has been laid.

BELOW: An angled window in the cantilevered main bedroom provides views of the woodland.

Angus chose blue and silver for their room. The spacious landing area serves as a shared playroom.

Above the dining room is a high-level balcony which has been painted bright green and may be accessed through a tiny child-sized door, with slit windows enjoying views down the valley, and beside the kitchen is a family room lined with full-height cupboards designed to conceal the TV and keep clutter under control.

Building work started on site in February 2011 and the family moved in at the beginning of November – relieved to finally be able to leave their latest rental property. Every room in the new house was specifically designed for the way they live, including quirky features and bold colours.

“There’s nothing we would do differently in terms of the project, and we look back on it really fondly,” says Caroline. “There are sacrifices to be made when you build your own home, but overall the benefits are huge.”





ASK CAROLINE

◆ WHAT WAS THE HIGH POINT OF THE PROJECT?

Working together on a project as a couple was great, and we were extremely lucky to meet so many lovely people as a result.

◆...AND THE LOW POINT?

The constant gnawing worry about money and not being able to take the children away for proper holidays during the build - although we did have a castle quest every Sunday and visited around 100 castles.

◆ YOUR BEST BUY?

The kitchen was made by Coloro in St Helens for a fraction of the price you would normally pay for a bespoke kitchen. In fact it cost less than a kitchen from Howdens, and arrived ready-built.

◆...AND THE BIGGEST EXTRAVAGANCE?

The fan in the kitchen cost £3,000 because we weren't able to make any outlet holes in the walls.

BELOW: Oscar and Angus chose blue and silver paint for their bedroom, which was decorated by Robbie's father and features a high-level platform.



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