Two years ago the New York-based artist Taryn Simon set out to photograph every actress who has ever appeared as a Bond girl, starting with Ursula Andress of Dr No.

The results of Simon’s project, which can be seen this autumn at the Carnegie Museum of Art in Pittsburgh and are also being published as a book, are not so much celebratory as elegiac, marking the passage of time on female flesh.

Jill St John, who pouted through Diamonds Are Forever as the gem smuggler Tiffany Case, is now 73 and posed in a dandyish white trouser suit that appears to be channelling 1971. There is no sign of the soft auburn curls and pouting lips that made St John such an object of desire 40 years ago.

Meanwhile, the British actress Fiona Fullerton, who played Pola Ivanova in A View to a Kill (1985), appears in front of Simon’s camera wearing a matronly pink evening dress, her upper arms tactfully draped with a heavy stole.
Other actresses make a point of severing any association with their Bond personae. Carole Bouquet – the assassin Melina Havelock in For Your Eyes Only (1981) – presents herself as what she really is: a chic, self-possessed French bourgeoise of a certain age.

These photographs are part of a larger project by Simon, 38, which goes by the unlikely title of “Birds of the West Indies”.

It turns out that Ian Fleming, a keen birdwatcher during the many years he spent living in Jamaica, took the name “James Bond” from the author of a 1936 ornithological classic. Fleming liked the Bond moniker because it was “flat and colourless”, a fitting choice for a character whom he wanted to be “anonymous”. Simon became intrigued by both the humdrum origins of 007’s name and the format of Birds of the West Indies.

The real James Bond had listed and illustrated each feathered inhabitant of the islands in a meticulous, impersonal style that owed much to the scientific culture of the time. What would happen, Simon wondered, if she were to do a similar classifying job on the guns, cars and women that have made up the James Bond brand through the decades?

Invitations were sent out to 57 actresses, ranging in age from their late eighties (Honor Blackman, aka Pussy Galore) to their twenties (Gemma Arterton from Quantum of Solace). Also invited was the voice actress Nikki van der Zyl whose voice was dubbed over Ursula Andress' in Dr No and who voiced more than a dozen major and minor characters in nine Bond films.

Perhaps it says something about Simon’s extensive contacts book – she happens to be married to Gwyneth Paltrow’s brother – that all but 10 of the women agreed to be photographed. Reasons for declining included pregnancy and not wanting to be associated with the Bond franchise anymore.

Vanity, you suspect, may also have had something to do with it. While Simon’s photographs are not designed to be cruel, they do not flatter either. The plain white backgrounds and cool lighting show up every line, wrinkle and ounce of extra flesh.

“All the women had complete freedom to choose the clothes and poses they wanted,” Simon tells me. Some, such as Shirley Eaton, who was smothered to death with gold paint in Goldfinger (1964), have chosen props that refer back to their Bond days: Eaton teams her black evening dress with a luxurious fall of shimmering gold fabric.

Honor Blackman, by contrast, has chosen to be photographed in simple, chic day clothes, and Jane Seymour has been careful to distance herself from her New Age alter ego, Solitaire in 1973’s Live and Let Die. Clad in a bright-blue body-con dress and nude peep-toe shoes, the sixtysomething Seymour appears to be making the point that she has the know-how – and the body – to present herself as a contemporary object of desire.

Desire was at the forefront of Simon’s mind when she devised the project. “I wanted to explore how the Bond-film formula relies on a constant supply of state-of-the-art weaponry, luxury vehicles and sexually attractive women,” she explains.

To emphasise the way in which older Bond girls – not to mention the vintage cars and gadgets that appear alongside them – are constantly replaced by newer models, a “random number
The point, says Simon, is to draw the viewer’s attention to the way in which Bond girls, despite their highly crafted personae, are always essentially the same.

It isn’t all about the women, though. Simon includes photographs of guns and gadgets, which she found in private collections, archives and museums, allowing her to make the point that, while flesh blurs with age, metal keeps its edge. A 1977 Lotus Esprit, as seen in 1977’s The Spy Who Loved Me (which recently sold at auction for £550,000), looks as sharp as ever, as does a thermos bomb from A View to a Kill (1985).

The same is true for the low-tech knotted rope whip from Casino Royale (2006). Even so, the weapons and cars come trailing as much historical baggage as a Bond girl with a 1980s perm. The over-styled Lotus Esprit looks as though it was designed in the age of disco, while the thermos bomb is clearly a product of the industrial-chic vibe of the 1980s. Just like the women, Simon points out, the hardware has to be “refreshed” for each new outing of the franchise. All the same, the Bond girls remain at the centre of “Birds of the West Indies”. Some of the actresses, you suspect, relished the chance to step into the limelight once more, especially those whose post-007 careers have been less than stellar.

Others are clearly keen to contribute their own take on Simon’s intriguing project. Sophie Marceau, who starred as Elektra King in The World Is Not Enough (1999), positions herself as if she were the victim of a particularly sleazy casting session. Staring blankly ahead, she hoicks her sensible grey skirt up her thighs, perhaps in response to a request to show the producer her legs. And then there is Grace Jones, who starred as an Amazonian assassin in A View to a Kill. In the role of May Day, Jones strode about creating mayhem in a skimpy leotard that showcased her gym-fit body in fetishistic detail.

For her appearance in Birds of the West Indies, she wears nothing but a tuxedo jacket and some killer heels. At 65 her body is still extraordinary. Her face too is as handsome as ever. And yet there is something slightly sad, even sunken, about her defiant refusal to let time have its way with her.

“Birds of the West Indies” has not been an easy show to put together. But Simon has a reputation for setting up complicated projects: her 2007 show “An American Index of the Hidden and Unfamiliar” involved her wrestling access to highly sensitive government sites.

“Naively, I thought this was going to be much easier to set up,” she says with a laugh. In fact, it was a logistical nightmare, involving flights around the world to shoot the actresses in their own cities.

And then there was the issue of the 10 women who turned her down, including Gemma Arterton, aka Strawberry Fields, and that most iconic Bond girl of all, Ursula Andress, Honey Ryder. Their absence has simply become grist to Simon’s inventive mill. “Each woman who is not there is still represented by a blank space on the wall, together with a tag giving her name and the film in which she appeared,” she says. The idea is that viewers will fill the space with their hazy recollections of the missing Bond girls – and perhaps, in the process, even come up with their own explanations as to why these birds of paradise have suddenly turned camera-shy.