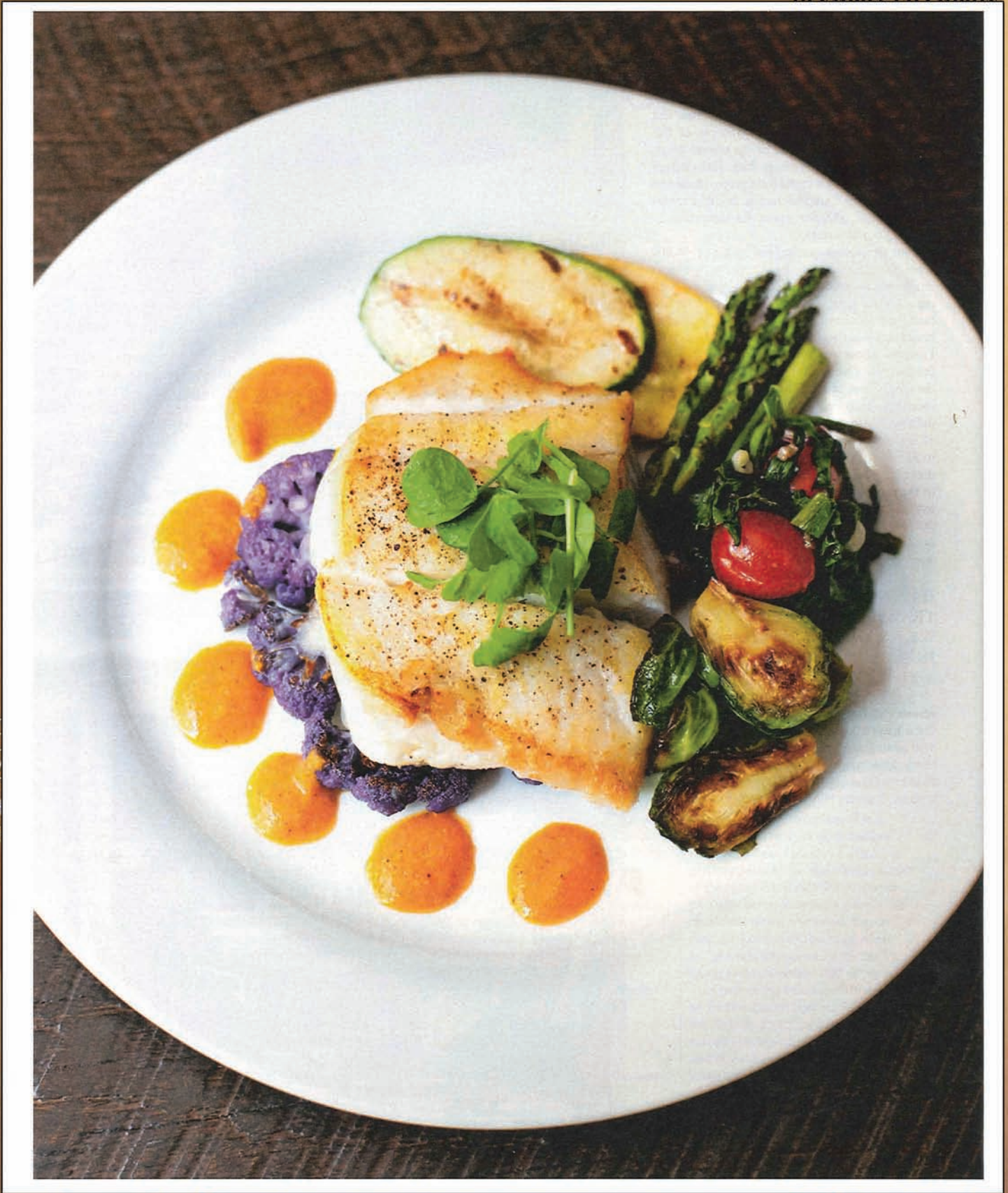


Telegraph magazine

16 July 2011

MOSHI MANIA
The children's gaming
website that's taking
over the world

OLYMPICS: GILBERTON



I
A
H
d



At Bell Book & Candle, a small restaurant in Greenwich Village, New York, a food revolution is happening. While most restaurants brag about their locally grown produce, the chef John Mooney is taking it one step further. Sixty per cent of his restaurant's produce is farmed six flights of stairs up on the roof. 'We call it rooftop to table,' he says as he winches down a bucket of tomatoes using an old-fashioned pulley system. The roof in question is nothing special. It is the kind of slightly uneven, dumbbell-shaped flat roof that you find on top of a lot of New York tenement buildings. 'The space was going to waste,' Mooney says. 'There was the odd sunbather up here, but it wasn't used for anything, so the landlord let us have it for free.'

As America's first rooftop to table restaurant, Bell Book & Candle, which opened last November, has attracted much attention. Even before the doors opened, TV crews and a reporter for the *New York Times* trekked up to the roof to visit the futuristic-looking garden, sample the food and report on the phenomenon. ABC news called Bell Book & Candle's living leaf salad 'spectacular', and now enthusiastic bloggers rave about the 'fantastic', 'great' and 'fresh' upscale comfort food. 'We just wanted the kind of casual neighbourhood place that we like to visit when we aren't working,' 39-year-old Mooney says. The most popular dishes on the menu are the

wild salmon with caramelised cauliflower and lime emulsion, the fried chicken, and the living leaf salads picked daily from the roof garden.

'We've had all the top chefs in New York stop by to look at the roof,' Mooney says, proudly surveying his 2,500sq ft roof with its fabulous view of the Empire State Building. 'We had the former mayor Ed Koch here last week.'



The revolution, according to Mooney, isn't simply about growing restaurant food on an urban rooftop, but doing it using a childish simple, environmentally friendly aeroponic system (a form of hydroponic gardening). Instead of using soil, the plants on the Bell Book & Candle roof are suspended in cups on the sides of plastic towers. Their dangling roots are regularly sprayed with a nutrient-rich water solution. 'If we were using soil to grow we would have had to reinforce the roof,' Mooney says. 'But these towers are so light [150-200lb each when full] that the only worry is in a major storm one or two might blow over.' They are all well anchored by their 20-gallon water tanks at each base.

Mooney is convinced that this aeroponic system is the future of affordable healthy food in the city, not only for restaurants but for home owners, too. Bell Book's co-owner Mick O'Sullivan, a former partner in the popular Wall Street gastropub the Full Shilling, adds, 'You need no skill at all to do this. If you asked either of us three years ago if we would be farming in the middle of Manhattan, we would have said you were mad.'

Two summers ago O'Sullivan and Mooney, who previously worked as the head chef for the restaurateur Drew Nieporent (of Nobu, Tribeca Grill and Corton), installed 58 plastic towers on the roof, the basic components for their aeroponic garden, and began experimenting with

Salad from the sky

On a rooftop in New York a soil-free system of growing towers that provides the vegetables for the restaurant beneath has started a foodie revolution. By **Lucie Young**. Photographs by **Ditte Isager**

Above John Mooney harvests produce from the array of towers on the roof of his restaurant, Bell Book & Candle.

Left seared halibut with grilled and roasted vegetables and romesco sauce (recipe overleaf)

Seared halibut with grilled and roasted vegetables and romesco sauce serves 4

Keep in mind that John Mooney uses only the freshest ingredients and they change as frequently as every day. The vegetables should be lightly oiled with grapeseed oil and seasoned with salt and pepper.

for the vegetables

4 courgettes, cut on the bias

6 baby leeks, cut in half lengthways

4 brussels sprouts

12 asparagus tips

8 grape or cherry tomatoes

6 baby rainbow carrots, cut in half

1 purple cauliflower (use white if you can't get it), cut vertically into 1cm slices

Place the seasoned and oiled courgettes on a hot grill for about three minutes on each side. Place the seasoned and oiled leeks on a hot grill for three to four minutes on each side. Blanch the brussels sprouts for 45 seconds in boiling salted water, then shock them by submerging them in a separate container of ice water. This stops the cooking process. Next, slice them in half lengthways. Oil the sprouts lightly, season and brown flat side down for three minutes on each side in a frying-pan until caramelised.

Brush the asparagus tips and tomatoes with oil, season lightly and grill for three to four minutes, or until the tomatoes blister.

Place the carrots on a baking tray and roast in a preheated oven at 180C/gas mark 4 for about five minutes. Season the sliced cauliflower on both sides. Drizzle with oil. Caramelize the slices for three minutes on each side in an iron frying-pan.

for the romesco sauce

5 medium-size tomatoes

8 cloves of garlic

120ml grapeseed oil

30g hazelnuts

30g Marcona almonds

5 piquillo peppers (pimientos or capsicums are fine as a substitute)

Start by charring the tomatoes on the grill for 3-5 minutes, then put them to one side. In a medium saucepan fry the garlic in the grapeseed oil for a few minutes until it just starts to brown. Add the hazelnuts and almonds and cook until you smell their aroma. Add the peppers and let them stew for five minutes. Allow to cool then blend until smooth, season with salt and pepper.

for the fish

4x200g pieces of halibut

Lightly drizzle the fish with grapeseed oil, season with salt and pepper and sear for three minutes on each side. To serve, arrange the vegetables on the plate so that the colours contrast, and drizzle with the romesco sauce. Top with the fish.

Hamish Anderson's wine choice 2009
Albariño 'Sobre Luis', Bodegas Castro



Martin, Val do Salnes, Rías Baixas, Spain

£11.99, M&S. Albariño comes in a number of guises, from fresh and salty through to peachy and textured. This falls into the latter camp, which is ideal as its gorgeous, aromatic, creamy nuances are wonderful with a dense fish such as halibut. Just as vital is the variety's signature tongue-tingling lift of acid to parry the romesco sauce.

Rooftop greens salad with thousand island dressing serves 4

for the dressing

225ml mayonnaise

30ml tomato ketchup

15g each of white onion, dill pickle, cooked beetroots, hard boiled egg, chives, Padrón peppers and flat-leaf parsley, all finely chopped

2ml Worcestershire sauce

Mix all the ingredients well, season with salt and pepper then chill.

for each plate of salad

1 large lettuce leaf (romaine or frisée)

1 small handful of mixed salad leaves

¼ of a cucumber, sliced

1 baby carrot, very finely sliced using a peeler

2 grape or cherry tomatoes, sliced in half

Put a large lettuce leaf on a plate. Mix 30ml of the dressing with the mixed leaves and place on top. Decorate with cucumber, carrot and tomatoes.

growing their own food. Today, as Mooney moves around the garden trimming off dead leaves and harvesting produce, he tells me how it works. 'The plants grow much faster aeroponically. Start to finish, tomatoes usually take 120 days, but ours are ripe in 80 days. Lettuces typically take 60-70 days but we are pulling ours out in half the time.'

The garden is bursting with produce: strawberries, watermelons (sitting at the base of the towers or trailing down on to the roof with their long umbilical-looking cords), courgettes, tomatoes, many varieties of lettuce, chilli, okra, nasturtiums, herbs, tomatillo (a staple of Mexican cuisine), aubergines, fennel, cauliflower, broccoli rabe and cucumber. 'I grew chickpeas, peas and sugar snaps last year,' Mooney says, 'but they didn't

yield much, so I haven't tried again. The only things you can't grow this way are fruit trees and bushes and any vegetable that grows underground, such as potatoes, beetroots and carrots.'

The water tanks at the foot of each tower are the key to the system. Every 12 minutes they are timed to generate a three-minute waterfall, which trickles down the inside of the towers, feeding the roots of the plants, which are held in little rockwool balls. The system acts like a hospital drip, filled with fancy vitamin water, providing the plants with all their nutrient needs. One of the major benefits of this system is that it uses less water than conventional farming. Whereas it takes a gallon of water to grow a head of lettuce over four weeks, the tower garden uses a 10th of the water because the excess is constantly cycling back into the system to be reused. In addition, the pump motor uses very little power. 'It's equivalent to what you would use for a Christmas tree,' Mooney says, adding, 'It could run on solar power, but we couldn't afford the investment.'

One drawback is that aeroponic, like hydroponic, can never be certified organic because, says Tim Blank, the founder and CEO of Future Growing, who devised the Tower Garden system used by Bell Book & Candle, the fertilisers are mainly mineral, and US standards require 'the majority of the fertiliser to come from plants and animals'. But Mooney and O'Sullivan are adamant that their produce is as good as organic. They use organic seeds and no pesticides. When they had an attack of aphids last year they released predatory mites to remove them. Blank

also reassures me that the plastic towers are certified safe for contact with food (and so presumably leach no chemicals into the water) and that the rockwool is inert. 'It is volcanic-based rock with lime as a stabiliser. The carcinogenic concern is when it's dry; you don't want to breathe it into your lungs. It has lots of small fibres, like in roof insulation, that can be a lung irritant.'

Hydroponic gardening isn't new. The term was coined in 1937, and today many supermarket tomatoes, cucumbers and peppers are grown without soil and using only a mineral nutrient solution. The reason why this method has not been taken up in domestic gardens is that most commercial systems use enormous horizontal tanks that require a lot of room, and each plant requires its own special nutrient formula.

Blank, who worked for 12 years at Disney's Epcot Centre in Florida overseeing the Land Pavilion and its four-acre hydroponic showcase, launched Future Growing with his aeroponic Tower Garden system in 2004. This vertical system takes up a fraction of the space of a garden or a conventional hydroponic system. Each stand can be up to 9ft tall – those at Bell Book & Candle are shorter because the building's facade is listed so the garden is not allowed to be visible from the street. 'The other unique feature of the system is that we have a proprietary blend of nutrients and minerals that works for all plants,' Blank says. 'It's called Tower Tonic and includes minerals such as nitrogen, phosphorous, chlorine, zinc and molybdenum. We're spoonfeeding the plants everything they need.'

Strawberry shortcake serves 4

750g fresh strawberries
120g brown granulated sugar
30ml aged balsamic vinegar
1 sprig of rosemary, leaves removed
500g plain flour
15g baking powder
30g white sugar
4g salt
75g butter
1 egg
160ml milk
750ml whipped double cream
4 sprigs of rosemary to garnish

Slice the strawberries and toss them with the sugar, balsamic vinegar and rosemary leaves. Set aside. Preheat the oven to 200C/gas mark 6. Grease and flour one 20cm round cake tin. In a medium bowl combine the flour, baking powder, white sugar and the salt. With a mixer add the butter in cubes until the mixture resembles coarse crumbs. Make a well in the centre and add the egg beaten with the milk. Stir until just combined. Spread the batter into the prepared cake tin. Bake in the oven for 15 to 20 minutes or until golden brown. Leave to cool for 30 minutes on a rack. Slice the shortcake horizontally in half, making two layers. Place half the strawberries on one layer and top with the other layer. Cover with the whipped cream and top with the remaining strawberries. Cut into four pieces and garnish with the sprigs of rosemary.



Wine choice 2009 Muscat de Beaumes-de-Venise, Domaine des Bernardins, Rhône Valley, France £11.20 (half) Tanners. Beaumes-de-Venise is in danger of becoming passé, looked down on with a touch of disdain by 'serious' wine drinkers. Don't let the bores put you off what is, when good, an utterly joyous glass of apricot, orange blossom and citrus peel. It also happens to be one of the finest things on earth to drink with summery fruit puddings like this.

Since Bell Book & Candle opened last autumn, Blank has been inundated with requests for his system. There are now aeroponic gardens on the rooftops of restaurants in Washington, DC, Chicago, LA and Orlando, and later this month at Chicago airport Blank will unveil a 20x40ft aeroponic garden within a glassed-in area. Using a combination of natural sun and grow-lamps, this garden will provide vegetables for several of the airport restaurants. Blank also sells his system on mytowergarden.com (available in Europe from next year). One tower kit (costing \$499) is sufficient to grow enough salad for a family of four every day in summer, Blank says. He has six towers in his back garden to cater to all his family's vegetable and fruit needs. 'The only real work is keeping up with the harvesting,' he says.

For the home owner and those with a lot of indoor space, year-round harvesting is an option. 'We have a lot of people who just roll their system inside from their garden or terrace and use grow-lights in the autumn and winter,' Blank says. He hopes that soon every household in America will have a Tower Garden. 'It is the key to the survival of our food supply,' he insists. 'Now that fossil fuels are running out and water is the new gold, this is our best solution.'

Mooney and O'Sullivan first encountered Blank during a tour of Future Growings' hydroponic showcase in Orlando. They bought six towers and were soon impressed by the speed and ease with which they could grow vegetables. When they started converting an old launderette in the West Village into Bell Book & Candle, they

invited Blank to plan the roof. 'They asked me how to lay out a hydroponic garden on a 106-year-old building. It had never been done before in the city, so they had to get a special permit.'

While Mooney grills a colourful array of rooftop vegetables to accompany a simple fish dish that he is serving for a group of friends for lunch (the restaurant is usually open only in the evenings and for brunch on Saturday and Sunday), he boasts that his rooftop garden will provide all of his fresh produce during four months in the spring and summer, and will save him \$6,000 a month in ingredient costs. In cooler months the roof can still produce 30 per cent of his needs. Water heaters in the towers ensure the nutrient feed remains a balmy 68F. 'We stopped last year on December 24 as we had one of the worst snowstorms in New York history,' he says. January and February are the two months when he doesn't grow anything.

Inside the restaurant, the staff are singing while making a strawberry shortcake for a friend's birthday. Mooney is taking a break at the bar, which has stripped brick walls and portraits of beat poets. Harsh weather this winter and spring meant that his first harvest was almost a month late. It was a nerve-racking experience, but Mooney never wavered in his conviction that the aeroponic system is the right choice. 'This is far better than farm to table. These fruits and vegetables haven't travelled anywhere. They were plucked off the roof this morning. They've never seen a fridge or a pesticide. What could be better than that?' bbandnyc.com