



Hydroponic Farmers Federation Newsletter

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**The Gold that was at the end of the
Rainbow at Lorne! - full conference
report inside.**



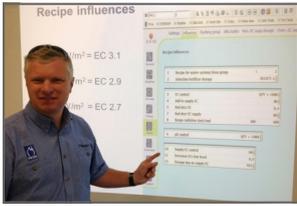
10th Biennial Conference 2016
Hydroponic Farmers Federation
The Next Step



Review of the event!



The Secretary



Well it's that time of the year and I have been on my travels again, and recently spent a week in the Netherlands as part of my job, before heading

across to the UK to see my old Dad—87 and still going strong. So what is the big attraction with the Netherlands? Well despite what you may hear, this is still the centre of Horticultural development and there is always something to see and learn. For part of the trip I spent two days training with one of Priva's climate advisors—a young and very competent lad by the name of Kevin, who also sported a trendy pair of Harry Potter glasses, so he fitted the wizard description well. For those of you who are keen computer users, you will understand how inspiring it can be to find out new and 'smarter' ways of fine tuning climates and irrigation strategies, which ultimately means I will be able to impart the same knowledge to the Australian growing community. So feel free to have a chat with me when next I darken your door as to what magic I have learnt! The trip also meant that I could attend the highly publicised GreenTech exhibition in Amsterdam. So literally having just left the best trade show

and Conference in the world at Lorne on the Friday, how could this event possibly exceed the HFF offering, and only a week later? Well whilst this newsletter has a huge amount of glowing reports on the HFF event, I am afraid that we probably were overshadowed by Greentech as a world event. With over 420 exhibitors and a seminar program, it was clear where we have to consider some expansion with the HFF event down the track if we are to compete! On a more serious note, just about every aspect of the industry was represented so delegate numbers were in the thousands. But not everyone was local, I bumped in to several Australian growers who had made the trip, and many had also been at the Lorne Conference, so like me they were getting the best of both worlds! This edition of our newsletter has some great reviews on the HFF conference as well as a concept I saw in London —so enjoy the read. So after my time in Europe I returned to the UK and took my dear old Dad out for a pub lunch—all very nice, and a pleasant dining experience apart from the bit when he managed to place his paper napkin too close to the candle on the table, and set fire to the thing. Luckily his son has 26 years experience in the CFA so I managed to save the building from being burnt down—never dull in my world! TB

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The President



Welcome everyone to our latest newsletter, and it certainly is a bumper edition! My thanks as always to Tony B for the hard work he puts in to collating the newsletter, and apart for the Conference reports, there are plenty of other items of interest for you to read. It was really great to see so many people at the conference, all enjoying themselves and networking - exactly what we wanted to see. Without doubt, the planning for, and the lead up to the conference was an extremely stressful time for the committee. There was an awful lot on the line with this conference, and the general feeling was that if it didn't go well then we would put a

hold on the whole concept. However, all the planning and hard work paid off and we had a record number of delegates attend. The speakers were all excellent and each one of them had a great story to tell. And a very special highlight was having Frank Costa—Costa's president and also the Ex Geelong Football club president (go the mighty Cats!) as our breakfast speaker. I don't think I have ever witnessed a speaker literally having the audience hanging on his every word before—great stuff. The conference also saw us utilising the skills of a new face to the HFF in Callum Cormack, who acted as one of our joint MC's for the event. Callum did a great job and has expressed his interest to work more closely with the HFF on further events—welcome on board Callum. I do also have to recognise the fantastic efforts made by ASN Events in the general management of the conference and Simon and the team again worked tirelessly to ensure that the event ran smoothly. This was also the last event for long time ASN employee Emily Gangill, who has since left ASN to travel to Holland in the next part of her life adventures. Em, we thank you deeply for all your efforts and wish you well for the future. And finally, I need to acknowledge the tremendous input of the Powerplants team as major sponsors—without who we certainly wouldn't have achieved the great results we did. Thank you Carl, Simon and the team. And in case you wondered, the wheels are now in motion for the planning of the 2018 conference - the



Millie Trandos and family

work never stops! On a somewhat sad note, I also have to report the loss to us of Millie Trandos. Millie was the wife of Harry and mother to Steven, Danny and Jamie, who make up the management team of Trandos Hydroponic Growers in Western Australia. Millie was a lovely gentle person who always supported Harry and the boys in everything they did and always looked on the bright side of life. Millie left us all too early on the 25th of July, 2016. I am sure that you will join me and the wider HFF family in passing on our condolences to Harry and the boys. RIP Millie. The next grower meeting is coming up in October, and full details are listed in this newsletter. Chisholm Institute of TAFE

are hosting the event in partnership with YARA fertilisers in what promised to be an informative day. Peter de Vries (YARA's lead agronomist) will be joining us and will be both presenting and taking a question and answer session on fertiliser use and hydroponic fertiliser recipe configuration in general. This promises to be a really informative session and I would encourage you all to get the date in your diaries now so that you don't miss out! Unfortunately one person that we know may not be able to make the event. Industry identity and well known personality, George Bobin, was recently rushed in to hospital for emergency heart surgery. The latest reports I have is that George came through surgery well and is now recovering. We all know that as a person, George has a big heart, and it's pretty important that he keeps that heart beating strongly! We wish you all the best George and hope you get well soon. That's about all from me, and I look forward to seeing you all at the grower meeting.

Regards, John

Membership report



Hi everyone, well it is with some excitement that I can report to you that we now have a staggering 200 members in the HFF. So at this point I should really take a bow, make a nifty speech on how all my hard work has paid off, and then resign my position and invite someone else to beat the number! But unfortunately I can't really take all the credit for our expanding numbers. As part of the conference, the trade were allowed to invite guests and if they were not HFF members then they received a complementary membership to the end of the financial year. So the reality is that some of these members may not renew their memberships, BUT there is a good chance many will. These higher numbers give us a better membership base and also place us on a better footing as a 'voice' of the industry.

So if you know of any more potential members, we would love to hear from them. The next grower meeting is in October so a great chance for you to bring a friend along to see what we do! **Ian**

HFF Grower Meeting and AGM Report



This year's Hydroponic Farmers Federation (HFF) AGM was held on Wednesday the 27th of April and was kindly hosted by Ian and Wendy Mortlock. Over 40 HFF members first started the day at Mortlock Hydroponic's Maryborough facility, which has recently doubled in size to an impressive 3.0 hectares. The tour of the facility included a briefing on the operational practices including varieties, crop management practices including susceptibility to BER and the use of biologicals to combat pests, labour management with the Priva FS Performance recording, monitoring and management system, and finally harvesting and marketing of the produce. The recent upgrade and the introduction of the recording system has resulted in a considerable improvement in productivity and reduced labour costs. Given the size of the operation and recent market conditions this would appear to have been a very wise investment. The Mortlock's are to be congratulated for opening their operations to other growers and sharing their knowledge and experience with others in the industry. Following the farm tour, the assembled group then retired to a nearby facility where sponsors for the day - Royal Brinkman - provided lunch for the delegates, and the AGM program continued. HFF President John Elford welcomed the attendees and members, and reported on the past years activities, including organisation of the forthcoming HFF conference. The treasurer, David Pearson, presented a report which showed the HFF has

continued to thrive and build its reserves. This provides the foundation for ongoing active support of their constituency. Guest speaker, Patricia Murdock of the Victorian Farmers Federation Industrial Division then presented a comprehensive update on the state of play in regards to the Modern Horticultural Award. Every four years the Fair Work Commission is required to undertake a complete review of all industrial awards which includes hearings and submissions from all interested parties. This is conducted in the context of the same reviews being undertaken across all of the "Modern Awards" so that more general provisions being sought by employer and employee representatives may become "common" to all applicable awards, but includes changes being sought which may be specific to particular industries. The key provisions being sought to be changed in the Modern Horticulture Awards 2010 are:



HFF Grower Meeting and AGM



Casual employees to be paid overtime (currently not paid in Hort Award)

Casuals convert to Permanent after 6 months (currently may be deemed after 12 months)

Minimum daily hire of 4 hours for all permanent full and part time employees (currently only specified minimum daily hours in Award is 3 hours on Sunday)

Annual Leave - excessive accumulated, cashing out or time off in lieu

Family friendly flexibility provisions (employees right to demand hours & days)

Domestic / family violence leave with pay (new paid leave being sought)

PCA Chair, Robert Hayes, then gave an overview of PCA activities for the year. This included establishing the Local organising Committee for the 2017 biennial Conference in Adelaide, commencing a comprehensive Strategic Review of the PCA, an update on HIA approved projects including (a) a Project

to review, current technologies, conduct Benefit Cost Analysis, and trials of Smart Glass and Semi Transparent Photovoltaic Glass, likely HIA approval for a further Horticultural Building Code to bring some sanity to this vexed area, and, an update on a project concept intended to address potential issues facing new and existing growers with regards to WOH&S and plant & equipment compliance. renewing a minor use permit for protected cropping tomatoes for Applaud/Buprofezin,, attending Agvet prioritisation workshops, and responding to Biosecurity proposals from AusVeg and similar government and statutory situations. The final thought provoking presentation was from Graeme Smith looking into the future of commodity crops such as grains and pulses that underwrite global nutrition for billions of humans today.

The conventional wisdom is that broad acre production of commodity crops such as wheat, barley and oats, rice, and the various pulses such as soy bean and lentils, will always be soil based. Together with crop breeding to develop specific varieties suited to protected cropping cultivation under artificial lighting, multi-level vertical farming installations utilising optimal lighting, controlled nutrition, pest and disease and water technologies may eventually challenge this mantra. In the end, it all comes down to the economics of energy conversion and transfer, resource utilisation rates and return on capital. The meeting closed at 3:30pm with thanks to the day's sponsors and the Committee of HFF and the Mortlock family.

(story courtesy of Robert Hayes)



HFF 2016 Conference Report

There was certainly plenty to see and do at this years HFF conference, and those that attended would certainly support that view. The conference started on Wednesday the 8th of June and delegates were treated to a live demonstration of salad creation and presentation by the team from Rijk Zwann—Love My Salad featuring chef **Christopher Howe**. The event proper commenced with an opening address by **HFF Chairman John Elford** who welcomed everyone to the conference and also gave an overview of how the HFF had been working closely with ASN events and Powerplants Australia to bring the event together. Representing the major sponsors, **Carl van Loon** also greeted all of the delegates and encouraged everyone to enjoy the event. Running of the event was handled by two MC's, those being **Graeme Smith** and **Callum Cormack**. The Keynote speaker was **Martin Kneebone** from Freshlogic who



Martin Kneebone

Scott Mathew

Richard Vollebregt

Nicky Mann

Jan Dijkman

gave a very comprehensive account of the trends driving near term change in the food market and what they mean for hydroponic growers. Following the lunch break **Danny Trandos** from Trandos Hydroponic Growers spoke on maximising plant potential when using grafted plants. **Scott Mathew** of Sygenta followed and gave a very informative talk on how focussing on the simple things in life often make business easier but are often overlooked. **Richard Vollebregt** of Cravo rounded off the first session and explained the concepts and practicalities of using retractable roof style structures for growing. The second session was started by a presentation from the ever enthusiastic **Nicky Mann** from Roses 2 Go on how to survive and thrive in the Australian hydroponic flower industry. **Jan Dijkman** of Philips gave a very informative presentation on the latest developments in LED lighting and how this developing side of lighting is impacting on commercial horticulture. The final speaker of the day was **Don Grant** of Tasman Bay Herbs on the issues of recalling products. As is tradition, the Protected Cropping Australia AGM was held at the conference, and this was then followed by the welcome cocktails event sponsored by South Pacific Seeds. It would be fair to say that this was a well supported event! The second day of the



conference commenced at 9:00AM sharp with **Michael Simonetta** of Perfection Fresh Australia giving his view of marketing trends and innovations, which was followed by a presentation from **Bryce Gilchrist** of Tasman Bay Herbs on how to use a strategic approach to turning a business around. The final speaker

HFF 2016 Conference Report

for the morning saw **Nicky Mann** return to the lectern to give us her interpretation of the berry market. The delegates then moved off to the farm tours where guided tours were given at the properties of plant propagation specialists **Boomaroo Nursery** and vegetable grower **Thoang Trinh**. Both enterprises gave



the delegates a great insight in to the running of the enterprises and a great 'behind the scenes' experience. After returning from the tours, it was time for the conference dinner which was kindly sponsored by **A & D Weighing**. Delegates were treated to a great meal, and some first class entertainment from the highly talented comedian, who had very able support from Ian Mortlock, Michael Simenetta and Danny Trandos on the stage—and a very special thank you to those three gentlemen for being such good sports! The final day of the conference was opened by an amazing presentation



Frank Costa

from **Frank Costa AO OAM**, who gave us a great insight into how he has developed his businesses and the Geelong Football Club. Frank's presentation was spell binding and was very entertaining. Spare a thought for **Herman van der Gulik** of Enza Zaden who had to follow that act!, but as ever Herman provided an entertaining presentation on developments in genetics and breeding techniques. A regular speaker at HFF events, **Sophie Parks** of NSW DPI, then outlined how it is possible to undertake research on farms. After morning tea **James Rattray** of Flowerdale Farm gave a thorough explanation on the issues surrounding the potential for entering the export market. **Marcus van Heyst** of Powerplants Australia gave a practical and informed presentation

on the issues associated with precision irrigation for berry growing, after which **Len Tesoririo** of NSW DPI, explained how plants defend themselves against disease attack. To conclude the proceedings **James Altmann** gave some great insights in to using Nesidiocorus as another weapon in the IPM armoury, and we finished with **David Wignall** enlightening us on the forthcoming move towards having medicinal cannabis being produced as a crop. If you require more information on the speakers presentations, ASN

Events have kindly posted copies of the presentations at <http://www.hff2016.asnevents.com.au/program/speaker-presentations/> The trade show was an ever present and always busy part of the conference, and this year we had 21 exhibitors all displaying the latest and greatest in their product ranges. Most stand holders reported a brisk level of interest and general optimism amongst their existing and potential new customers. The final icing on the cake was the opportunity for HFF President John Elford to present the local CFA unit with a cheque for \$2000 which was the proceeds from the sale of the Love My Salad packs across the three days—well done!!



Leigh Taig and Marcus van Heyst help the PCA's secretary, Saskia Blanche, load her mobile wardrobe on to a truck....

HFF 2016 Conference in Pictures



HFF 2016 Conference in Pictures



HFF 2016 Conference in Pictures



HFF 2016 Conference in Pictures



Conference Feedback

Getting feedback on the conference is very important to the committee, and we recently had a lengthy email from Herman van der Gulik of Enza Zaden who took the time to reflect on the event. Herman has made some excellent comments and we thought that it would be beneficial to share these thoughts with you all.

Dear John and Emily,

Please rest your weary heads, smile with contentment that the HFF conference was successful and have a trouble free sleep. I enjoyed the conference, the people, the venue and giving my presentation. The venue contributed a lot of the atmosphere of the conference and is a vast improvement over the last conference venue. The atmosphere of the conference is better when there are more growers and fresh faces (renewal and growth). It was a great effort to bring more growers to the conference. The committee should be proud of this conference. I compare the PCA conference to the Olympics when many people attend but few people know your name. The HFF is like the Commonwealth games when you know many people, there is a greater percentage of athletes, records are not always broken but it is a spectacle and they are considered to be the friendly games. At the Commonwealth games there are fewer events but they are well attended and supported. Ditto for the HFF conference - the friendly hydroponic conference. The diverse hydroponic crops can easily be too much but there was a good balance / diversity and they were interesting rather than dominating. I do not sell berry or flower seed but highlights from these crops are interesting. For the next HFF conference please consider asking someone to speak about hyperspectral imaging for machine vision in packing operations and for identification of nutrition, pests and disease in crops. It is an area of agricultural technology that is advancing rapidly and in 2 years will be even more accessible. These cameras have dropped from \$1 million (400kg) to \$50,000 (1-2kg) in 3 years. Machine vision itself is also interesting. A new research company from Massey University, NZ, has developed a technique with UV lights that reduces fungal disease of lettuce from seedling to harvest, reduced time to maturity and increased the head weight of leaf lettuce. They might also be interesting. If you need contacts I am happy to assist.

I was very impressed with the enthusiasm of the committee; they looked prepared and ready to jump in when needed. I liked that there was a different and professional MC who operated without favouritism and without technical opinions. It was good that there was time in the program to meet with others and places to meet comfortably nearby. Please retain the single presentation room so people stay in the same place and speakers don't compete. I suggest that the venue could invest in oil for the creaky doors to avoid the distracting noise on entering. The presentation room was cold at times but the stage was directly under the heating vent. It was very hot on stage with the heating on. I would like the committee to consider a more central speaking position for the lectern to avoid the MC dancing with the speakers at arrival and departure. The tables for breakfast on Friday were very convivial. The conference was cosy, stimulating, friendly, positive, comfortable, and very enjoyable. Convivial is perhaps the word that sums up the HFF conference. Unfortunately there were many tables unoccupied on Friday afternoon as delegates departed for home on the eve of a holiday weekend. As a speaker I enjoyed the experience of sharing who Enza Zaden is and also sharing what happens in an important part of our business. I would love to speak again at the next HFF conference if you could fit me into the program. Maybe we could follow the journey of a seed from production to arrival at the nursery. I thank Tony and the HFF for the gift of excellent wine for the speakers, it was unnecessary but very much appreciated.

Thank you again for the successful conference. While my time at the conference was short, it was very enjoyable and it was one of my most enjoyable conferences yet.

Best regards

Herman

If you have feedback on the conference—good or bad—we would love to hear from you. Please email any feedback to John Elford at johnelford@bigpond.com



The 2016 HFF Conference

A word from the Sponsors - Powerplants Australia



The Powerplants Australia sponsorship of the HFF conference was a pivotal key in the success of this year's event. The actual sponsorship deal was struck at the PCA event on the Gold Coast in July 2015, and after being hounded by Michael Tran for the whole event, Carl van Loon eventually agreed to Powerplants Australia becoming the HFF sponsor. Whether it was Carl's ability to see a good marketing opportunity or just the fact that he got fed up with Michael's constant nagging remains a secret to this day. However, Powerplants took on the role with enthusiasm and immediately set to work to ensure that the event would be a success. 'This might sound harsh, but it would be fair to say that the 2014 HFF conference was a disaster for the trade' said Carl. 'The number of delegates was very low and it left a lot of people being disillusioned with the event. We



Powerplants co-directors—Carl van Loon and Simon Gomme

knew that taking on the sponsorship rights was more than just having our name on the event, the event had to work, and to make it even tougher, we had to change the mind set of people from 2014 to embracing a dynamic 2016 HFF conference.' The concept of allowing the trade to invite their customers as delegates was a sound move and one that Powerplants took on board immediately. 'We could see a great opportunity to get a large number of delegates to the conference using this strategy', said Powerplants co-director, Simon Gomme. 'To assist in this area, we had a staff member working full time to help our sales team identify growers who would value attending the conference, and ensuring they committed to attending. We could also see value in getting delegates in from the wider industry such as the



Powerplants staff member Ilvy de Haas worked full time on the conference

nursery stock growers and the berry industry. The results of all of the hard work that went in to this activity was realised with a record 250 delegates attending the conference' said Simon. Without doubt, the buzz and vibe around the conference was infectious, and the event allowed all delegates to draw inspiration from both the trade exhibits and the speaker program. 'Whilst we were the naming right sponsors, there were plenty of other companies assisting with sponsorship deals. A well run conference such as this one gives benefit to sponsors in both the short and long term' said Carl. 'And we need to also recognise the considerable effort of the HFF committee in making the event a success.' And for the future? 'We invested a huge amount of time and money in to making this event work. We feel we have assisted in developing a model that can be used again for future conferences, and will again allow the HFF to look forward to success at the next event' said Simon Gomme. 'These sort of events need fresh ideas and support, and I would be encouraging other industry members to consider taking the naming rights on board' said Carl. So with the planning process already in place for 2018, is your company the next naming right sponsor? Feel free to call the HFF!

HFF Study Tour to South Korea

Having just staged a massive event for the HFF members, the committee has turned its attentions towards providing another opportunity for the broader membership in 2017. Michael Tran has been investigating the potential of having a study tour to the Horticultural areas of South Korea. At this stage the trip will not be able to have HAL funding allocated to it but Michael has estimated that the Total estimated cost will be in the region of \$3,500-3,800AUD per person. Included in this cost will be air fares, food, accommodation, transportation, tour and guide in Korea. The trip will commence and finish from Melbourne airport. At this stage the cost excludes insurance.



The proposed itinerary at the moment is:-

Day one - Departure from Melbourne Airport

Day two - Arrive Seoul Airport in the morning, travel to Busan city and visit a farm on the way

Day three - Visit two farms around Busan area—Night time city tour

Day four - Travel to Seoul city, visiting visit one farm and one flower research center in Nonsan city

Day five - Visit two farms in Seoul area

Day six - Visit one farm and city tour include Night tour in Seoul

Day seven—Departure from Seoul and return to Melbourne



Currently the tour is being planned for the Korean spring season (April to May). Michael Tran will be updating the status and detail of this event at our next grower meeting in terms of proposed dates, revised costs, and general detail. The committee is expecting this trip to be sold out very quickly, and

members attending the next grower meeting will be given first preference for places on the tour — However those members wishing to place a \$500 deposit at the grower meeting will secure their places. So if ever there was another good incentive to attend the grower meeting—this is it! So if you want to join us on this great trip, make sure you attend! We look forward to seeing you all at the grower meeting complete with your money! *Pictures —thanks to Hortidaily*





HFF Grower Meeting



**Hydroponic Farmers Federation
 Grower Meeting
 Wednesday 19th October 2016
 Chisholm Institute of TAFE—Cranbourne Campus
 2 New Holland Drive,
 CRANBOURNE, VIC 3977**



The next HFF Grower day will be hosted by Chisholm Institute of TAFE with support from YARA Fertilisers
 Join us (HFF) in an opportunity to see and talk with other Growers/Wholesales/Trade at this modern and exciting training facility.

- 10:00 AM Registration—Tea and Coffee
- 10:20 AM Welcome by the HFF President - John Elford
- 10:30 AM Presentation - Peter De Vries (YARA) 'Building a balanced nutrient program'
- 01:00 PM Lunch and networking
- 01:30 PM Vortex Pest Control Presentation
- 01:50 PM PCA update
- 02:15 PM HFF Study Tour information session
- 02:45 PM Any other business
- 03:00 PM Meeting closes

Please note, Program may change on the Day.

FOR CATERING PURPOSES PLEASE RSVP BY FRIDAY 7TH OCTOBER

PLEASE EMAIL RSVP TO John Elford — johnelford@bigpond.com with the following details:-

NAME/S.....
 NAME OF BUSINESS/COMPANY.....
 PHONE NUMBER/email address.....



Solid Fuel Heating

Glasshouse-grown hydroponic Flavorite-branded truss tomatoes, are grown at Yarragon, in Gippsland, Victoria, and that in itself is not so special.

The difference with the tomatoes grown at Yarragon is the renewable energy used to create the climate to grow them in.

Andrew and Ange Bayley are dairy farmers who wanted to do something else with their land, and they made the decision to grow truss tomatoes in 2003, and they now produce 450,000 kilograms, eight months of the year., which has seem them triple their production since 2014.

“We were using briquettes and we wanted to look at other options,” Andrew Bayley said. “We travelled the world looking at boilers and glasshouses and we bought a system that enabled us to triple the size of our glasshouse-growing space, from 5000 to 15,000 square metres. When we built the new 10,000 m² glasshouse, we were changing from plastic twinskin to glass. It enabled us to grow 450,000kg of truss tomatoes, tripling production and extending their growing season. We plant in June, pick 10 weeks later and through to mid-May, and then we pull the plants out and go into maintenance – cleaning for biosecurity purposes and repair. We expanded because we had to get the new heating system, and it was a choice driven by economics and sustainability.”



Andrew and Ange Bayley with their wood burning boiler

The wood waste, a byproduct of forestry, is sourced from local timber yards, in sawdust and chip form. To do that, they are using the heat created from burning 84 tonnes of mixed species hardwood waste and 24t of sawdust per week, in a purpose-built boiler. The chips, up to 600mm long, make up at least 15 per cent of the mix, for moisture.

“It’s a clean product we’re burning, so we end up with very little waste ourselves,” Andrew said. “1100t of wood waste produces one bin of residue, which is emptied every four to five months. It’s also halved

Solid Fuel Heating

our heating costs, so the cost recovery time was substantially very feasible.”



Integrated computerise control

The wood mass is moved hydraulically through a fully automatic, self-cleaning system, driven by a computer. This is integrated to Mr Bayley’s smartphone so he can remotely access the system and be alerted at any time to changes. A camera in the incinerator also feeds information to the off-site technicians (in Austria) and to Mr Bayley through his smartphone. A winter night-time temperature of 16° Celcius is maintained. A 400kVA generator provides backup electricity

in a region where the mainstream system regularly breaks down. “When you’ve got watering at 10-minute intervals in 40° weather in summer, you’ve got to have backup,” said Andrew. Water is harvested from the many roofs – including the greenhouse, glasshouse and the shed that houses the boiler – and used to irrigate the dairy country next door. The next stage is to recycle the water used in the hydroponic watering system. They currently collect and have capacity to store 20 megalitres of rainwater from the glasshouse. The bottom line: “I’ll install more glasshouses before I’ll buy more land to milk cows,” Mr Bayley said.



Andrew Bayley at his fuel store

Story and pictures courtesy of Good Fruit and Vegetables and Hortidaily)

Underground growing in the city of London

The UK's first underground farm at Clapham in the heart of London is now producing daily crops of herbs which go to the capital's fresh produce market at New Covent Garden and a home delivery service. The aim of the company is to help address the looming issues of growing population, increasing food demand and sustainability in farming.

The advantages of underground farming are a controlled environment and being very close to the market. Co-founder of Growing Underground Steven Dring said his fresh herbs can be on a restaurant plate within four hours of harvesting and 24 hours at most.



The idea was formed when Dring and business partner Richard Ballard, who had been discussing the challenge of sustainability in the pub, saw a book on vertical farms. But, even during the recent recession, rents for city tower blocks were too high. Then Ballard, then a film student, encountered the Clapham tunnels while location-scouting for a shoot.

The tunnels, built as air raid shelters in world war two, are 120 feet under the surface and vast: 65,000 square feet and able to harbour 8,000 people. Now, one of the tunnels hosts trays of sprouting herbs. This list of produce is long and includes pea shoots, rocket, wasabi mustard, red basil and red amaranth, pink stem radish, garlic chives, fennel and coriander.

Growing Underground's fresh herbs can be on a restaurant plate within four hours of harvesting and 24 hours at most.

After germination in a dark, humid section of tunnel, the trays are brought into the light and grown hydroponically. The herbs are grown on mats made from carpet off-cuts and fed with nutrient-laden water, 90% of which is cleaned and recycled.

Dring said the project would not be viable without low-energy LED lights: "The only reason we can do this is because of the improvement of in technology in the last five years." Currently the subterranean farm can produce up to 2,000 packs a day, each with 30g of herbs.



The company has raised £1.2m so far, partly via crowd funding, and has major salad firm G's as an investor and Michelin-starred chef Michel Roux Jr as a co-director. "The herbs will certainly be a fixture on the menu at [my restaurant] Le Gavroche," said Roux, who happens to live almost directly above the

Underground growing in the city of London



to live almost directly above the tunnels. “Rich [Ballard] wanted to change the world. I didn’t,” said Dring, who used to work in catering logistics. Instead, Dring said, he wanted to show sustainable businesses can be profit-making and not need subsidies. It is early days and despite the much lower transport emissions which their city-centre location enables, Dring does not expect the farm to be carbon-

neutral and will offset its emissions via a robust forestry scheme. Growing Underground began with fresh herbs because of their high value but expects to move into salad crops next. Dring describes the underground operation as having created new farmland but acknowledges that conventional farming is not going to be threatened by it soon. “We will only be complementary to farming, but if you grow fresh produce like salads and herbs right near people, then the fields can be used for more potatoes, carrots and so on.”

Dring said there is an increasing interest in hydroponic growing in warehouses, especially in China and Japan, but he did not know of any other underground farms. Interest in urban farming is growing and other novel approaches include Farmed Here, a vertical farm near Chicago, and Freight Farms, which creates ready-made hydroponic farms inside a ship-



ping container. Rather than being threatened, Dring welcomes the competition: “It encourages us that we have not gone too leftfield.” But he said there was still plenty of work to do to build his business and develop sustainable urban farming.

For more detail and the latest developments in the project feel free to check out the web site at <http://growing-underground.com/>

Story and pictures courtesy of Daily Telegraph

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