



**An Association for Retired Professional Engineers**

# **NEWSLETTER      March 2012**

## **PROGRAMME OF EVENTS    2012**

11 <sup>th</sup> Apr	Wednesday	Visit: Back Stage Tour Theatre Royal, Brighton
19 <sup>th</sup> Apr	Thursday	Coffee - at Spotted Cow, Angmering
26 <sup>th</sup> Apr	Thursday	Coffee - with Partners the Swallows Return, Worthing
15 <sup>th</sup> May	Tuesday	Outing: Bluebell Railway Carriage Works.
17 <sup>th</sup> May	Thursday	Coffee - at Spotted Cow, Angmering
31 <sup>st</sup> May	Thursday	Coffee - with Partners the Swallows Return, Worthing
20 <sup>th</sup> Jun	Wednesday	Outing: Sussex Wildlife Trust, Henfield
21 <sup>st</sup> Jun	Thursday	Coffee - at Spotted Cow, Angmering
28 <sup>th</sup> Jun	Thursday	Coffee - with Partners the Swallows Return, Worthing
18 <sup>th</sup> Jul	Wednesday	Visit: Brookhurst Wood Waste Processing Depot
19 <sup>th</sup> Jul	Thursday	Coffee - at Spotted Cow, Angmering
26 <sup>th</sup> Jul	Thursday	Coffee - with Partners the Swallows Return, Worthing
16 <sup>th</sup> Aug	Thursday	Coffee - at Spotted Cow, Angmering
30 <sup>th</sup> Aug	Thursday	Coffee - with Partners the Swallows Return, Worthing

All Talks and Meetings will commence at 2.30 pm and be held in the Chichester Room, Field Place, Worthing, unless another venue or time is indicated.

Timings for visits and outings will be as printed in the detailed description of the activity. Coffee mornings commence at 10.30 a.m.

## Website for the RCEA

For latest information, log into [www.rceasussex.org.uk](http://www.rceasussex.org.uk)

## Membership

We are sorry to report the death in March of **Ron Pritchard**. Ron had been a supportive member for 12 years

## New Members

D. G. Terry, EngTechMIMechE, AAE, MIMI, LCGI  
15 Bellview Road, Tarring, West Sussex, BN13 1EY  
01903 211101 [Davidterry7@yahoo.co.uk](mailto:Davidterry7@yahoo.co.uk)

David & Avril  
RAF motor transport technician, Garage proprietor, Lecturer Northbrook college, Rolls  
Royce Goodwood, Quality management engineer  
*Interests* : Caravanning, Travel, DIY, Gardening, Walking

A. Lord, C.Eng, MIEE  
80 Limmer Lane, Felpham, Bognor Regis, West Sussex, PO22 7HF  
01243 830373 [tony.lord@Lordfamily.org.uk](mailto:tony.lord@Lordfamily.org.uk)  
Tony & Eileen  
Development engineer STC and EMI Medical, Technical support Rank Zerox, IT project manager  
*Interests*: Dingy sailing, Photography, Walking

## Membership Survey, 2010/2011 Events

The conclusions and opinions expressed in the survey have been passed to the committee for consideration while producing the next annual events programme.

The main conclusion to draw from the survey was that members were generally happy with the programme for 2010/11. The majority of events, talks and visits were deemed suitable for the RCEA membership. Talks were generally relevant and of suitable duration but the Cooch Lecture on lightning protection seemed to be the least popular followed by the Magistrates presentation.

Outings and visits were in line with members' expectations although some members found difficulty attending because of the distance involved or the amount of walking. Several members indicated that trips with organised coach travel, such as the Olympic trip, would be acceptable if venues had to be some distance away from Worthing.

A suggestion for a new coffee morning to be established somewhere in mid-Sussex and for the existing coffee mornings to be held on days other than Thursday will be looked into by the committee.

A number of suggestions for 'new' venues for visits/ outings were made and these will be considered for inclusion in future programmes. Suggestions included; National Grid Control Centre; Gatwick; Channel Tunnel Operation: Bletchley Park: etc. Some members however said they would only travel 25 – 30 miles from Worthing for any visit, a limitation, which can be difficult to meet at times.

Suggestions for talks included; space technology; new nuclear power; Thameslink project; and future water systems. Only one member volunteered to give a short talk, Industrial X ray inspection.

## Brief Detail – Talks, Outings and other activities April – August 2012

**Visit:**

### **Backstage Tour – Theatre Royal Brighton. 12.00 Wednesday 11<sup>th</sup> April**

The RCEA has organised a guided weekday backstage tour of the Theatre Royal, Brighton. Starting at Noon, please meet in the Foyer, the guided tour will last about 45 minutes to an hour, - depending on how many questions are asked.

This event is fully booked, a waiting list is in operation. Contact E J Pound

### **Visit: Tuesday 15<sup>th</sup> May 2012 Bluebell Railway Carriage & Wagon Works and Horsted Keynes mechanical Signal Box.**

We have arranged a visit to the Carriage & Wagon Works of the Bluebell Railway with the opportunity of also visiting the preserved mechanical Signal Box, both at Horsted Keynes. Effectively, there is no limit on numbers as we will be taken round in two groups if necessary but the works is unsuitable for wheelchairs.

Whilst members can if they wish join the party at Horsted Keynes Station at 1.15 pm, the general arrangement is that we meet for lunch at 11.30am in the restaurant at Sheffield Park Station and catch the 1.00 pm train to Horsted Keynes.

The upstairs dining room at the restaurant is being opened a half an hour early for our exclusive use but the food has to be pre-ordered from a limited menu, shown on the Booking Form. We will pay individually for the meals as we will for our rail ticket to Horsted Keynes

At the end of the visit, if there is time members may be able to take a train to the present end of the line at Kingscote or return to Sheffield Park.

The meal main course will cost £8.40 with a variety of sweets at about £3. 95. The return train fare to Horsted Keynes is £11.50 and to Kingscote, £13.50.

So that we do not miss the train, it is suggested that members buy their ticket before lunch.

There is, normally, adequate car parking at Sheffield Park Station which is off the A275 Lewes – Forest Row road north of Chailey on the A272 The Post Code is TN22 3QL. Please return Booking Forms to Richard Norton no later than 5<sup>th</sup> May.

### **Outing:**

#### **Sussex Wildlife Trust, Henfield. 14.30 Wednesday 20<sup>th</sup> June**

Introductory talk followed by conducted tour of trust grounds. The cost will be £3.50 per head.

Sussex Wildlife Trust is the leading conservation organisation covering Brighton and Hove, East and West Sussex. The trust looks after over 3000 acres of downland, woodland, wetland and heath. Their work also includes environmental education, working with land owners, companies and local communities to conserve Sussex.

Woods Mill, Henfield, West Sussex, BN5 9SD

Contact: Colin Pilling 01903 522356 or email [colin.pilling@ntlworld.com](mailto:colin.pilling@ntlworld.com)

### **Visit:**

#### **Brookhurst Wood MBT Waste Processing Depot, Horsham. 10.00 Wednesday 18<sup>th</sup> July**

This Mechanical Biological Treatment facility is intended, when completed by the end of 2012, to treat West Sussex's black bag household waste. The treatment process consists of both sorting and treatment (Anaerobic Digestion) to produce recyclable materials (mainly metals) and bio-gas.

This site visit will last for approximately two hours and attendees should wear sturdy footwear – all other personal protective equipment will be provided by Biffa.

The group is limited to 20 people by the site operator and parking on the site at Langhurst Wood Road, Horsham, RH12 4QD is limited, so please car share where possible.

## REPORTS

### **Talk: Tuesday 13 December 2011. The Research and Development of 2 Channel Stereo by Mr Jim Buckland - Member**

The talk commenced with a brief review of the early developments in Hi-Fi sound reproduction and then followed an introduction to the development of 2 channel stereo. He started by reviewing the history of magnetic recording and the people involved. The inventor of stereo was a relatively unknown engineering genius named Alan Dower Blumlein who was an engineer with Columbia Records which became a subsidiary of EMI.. Blumlein held over 100 patents in the field of radio, TV and sound recording, including stereo records, stereo films, and surround sound. Blumlein was also involved in the development of radar but was unfortunately killed, with all on board, when a Halifax Bomber with a prototype of the H2S Radar System crashed in June 1942. (see [www.doramusic.com](http://www.doramusic.com))

Jim then discussed the technicalities of “ 2 Channel Stereo”. Stereo sound systems can be divided into two forms:

The first is "true" or "natural" stereo in which a live sound is captured, with any natural reverberation or ambience present. The signal is then reproduced over loudspeakers to recreate, as closely as possible, the live sound. During “true” two-channel stereo recording, two [microphones](#) are placed in strategically chosen locations relative to the sound source, known as a Blumlein Stereo Pair which are on a 90 axis with both recording simultaneously. The two recorded channels will be similar, but each will have distinct time-of-arrival and sound-pressure-level information. During playback, the listener's brain uses those subtle differences in timing and sound level to [triangulate](#) the positions of the recorded objects.

The second is artificial" or "pan-pot" (panoramic potentiometer) stereo, in which a single-channel (mono) sound is reproduced over multiple loudspeakers. By varying the relative amplitude of the signal sent to each speaker an artificial direction (relative to the listener) can be suggested. By combining multiple "pan-potted" mono signals together, a complete, yet entirely artificial, sound field can be created.

In the 21st century "true" stereo is mainly confined to recordings or broadcast of live, acoustic music, particularly classical music. Almost all pop records and movie soundtracks are of the "artificial" variety. Jim reviewed the development of stereo recording systems and the associated design of replay stereo amplifiers and loudspeakers and the features in many of them that debased the stereo image.. The work of Blumlein was resurrected in 1954 by EMI because the advent of magnetic tape provided a suitable medium for 2-channel recording. The work was started in 1954 and EMI was responsible for the recording aspects which took place in the Abbey Road Studios and Jim was responsible for the reproduction work. Initially there were considerable problems with the recording work and it was only the concept of the in line 2 channel head which made stereo possible. Jim was responsible for the research and development of the inline 2 channel head which made stereo finally work. Until that time the early work on recording had been done with spaced left and right heads which was of course highly subjective to linear displacement due to temperature changes and the precision of mounting position.

Stereo sound systems up to the late 50s was an expensive pastime. However, the advent of the 33 1/3 rpm vinyl record brought stereo sound to the general public. Jim played many extracts of early stereo recordings including the very first successful stereo recording which had been made in Studio 2 at Abbey Road under the direction of Sir Malcolm Sergeant. These included operatic vocal, piano and orchestra, taken from early magnetic tape. Some early stereo LP record extracts were demonstrated to show the quality that became available.

Listening conditions are extremely important and psychologists were involved in investigating the ideal stereo listening conditions. They concluded that this is best done in the dark or with your eyes closed. Alternatively a bunch of flowers placed between the speakers illuminated by a single spotlight with the room in darkness enhances the experience. Jim demonstrated this by projecting photographs of bunches of flowers of various types and colours, while he played his demonstration stereo recordings.

Jim concluded his talk by showing a video (with stereo audio) of Richard Hills playing Tiger Rag on the Wurlitzer Organ in the Assembly Hall, Worthing – mind-blowing!!! (see [Richard.hills@cinema-organs.org.uk](mailto:Richard.hills@cinema-organs.org.uk)) to demonstrate the facilities now available with modern technology. This was followed by a question and answer session.

Overall this was a fascinating journey through the history of stereo by someone who has a passion for the subject.  
J Buckland/R Keir

**Talk: "Sir John Anderson 1814-86: The Unknown Engineer who made the British Empire Possible". Tuesday 20<sup>th</sup> September Mr Gwylim Roberts. RCEA**

Sir John was an Aberdonian who served a seven year apprenticeship at a local cotton mill before moving to London. In 1842 he was sent by his employer, David Napier, to the Royal Arsenal, Woolwich, to supervise the installation of a steam engine, thereby commencing his thirty year association with the manufacturing departments of the Royal Arsenal and which culminated with his becoming its first Chief Engineer. He was thus responsible for manufacturing the cannon and projectiles for both the Royal Navy and the army during his time there which included the Crimean War and many colonial wars, and also a period of rearmament because of perceived threats from France as well as a possible conflict with the USA.

His forte was in designing the machines for producing the various artefacts, thereby dramatically reducing manufacturing costs as well as transforming production times. When emergencies arose he was frequently able to increase production rates or design new machines in a remarkable short time. In addition to his regular duties at Woolwich, he equipped a floating factory, HMFF *Chasseur*, to help maintain the army's machinery in the Crimea as well as visiting the USA to inspect American manufacturing processes for small arms, following which he was instructed to design and equip a new small arms manufactory at Enfield, the birthplace of the famous Lee-Enfield rifle that saw Britain through two world wars.

In retirement he was active as a Vice-President of IMechE and as chairman of the machinery sections of the international exhibitions then in vogue, for which he received a knighthood and high foreign decorations. He donated a public library for the part of Aberdeen in which he had been brought up. He died at St Leonard's, East Sussex, and was buried at Aberdeen. His son, an ardent Anglo-Catholic, installed a crucifixion tableau, rood screen and memorial panels in his memory at Mary Tavy church, Devon, of which he was the rector. G Roberts

**Talk: Tuesday 10<sup>th</sup> January "History of RAF Tangmere 1916-1979 " by Mr Dudley Hooley, Director, Tangmere Military Aviation Museum.**

Dudley opened his talk by giving us a resume of his career in the RAF, time in industry and his involvement in the Tangmere Museum. He then covered the early days of RAF Tangmere.

RAF Tangmere was founded in 1917 for use by the [Royal Flying Corps](#) as a training base, in 1918 it was handed over to the [American Air Force who used it as a bomber base](#). It was mothballed after World War I and in 1925 the station re-opened to serve the [Fleet Air Arm](#). It went operational in 1926 with [No. 43 Squadron](#).

Dudley then covered the important role of RAF Tangmere during WW2 as a frontline main sector airfield, especially during the Battle of Britain. In 1939 the airfield was enlarged to defend the south coast against attack by the [Luftwaffe](#). Initially the main aircraft was the Hurricane but in August 1940 these were joined by the first squadron (602) of [Supermarine Spitfires](#), based at the satellite airfield at nearby Westhampnett. The station was subjected to a major raid on 16 August 1940, when 100 [Junkers Stuka](#) dive bombers caused extensive damage to buildings and aircraft on the ground. 14 service people and six civilians were killed.

Throughout the war, the station was also a secret base for the [Special Operations Executive](#)(SOE), who flew agents in and out of occupied France on 'black' Lysander flights to strengthen the [Resistance](#). Hitler decreed that all SOE operators and RAF pilots involved in these operations were to be treated as spies, and executed if captured. Dudley showed photographs of several pilots and SOE operatives – some who were either killed in action or executed by the Germans.

Dudley also described the actions of Pilot Officer "Billy" Fiske a US citizen and Olympic Bobsleigh Champion, who against the laws of the US (who were neutral at this time), joined the RAF early in the war. He unfortunately died in August 1940 at Royal West Sussex Hospital in Chichester from surgical shock, following an operation on injuries sustained following a sortie in which 8 Stukas were destroyed. Fisk was flying a

Hurricane but after just 15 minutes of flying time, a German gunner put a bullet through Fiske's fuel tank. With his aircraft badly damaged and his hands and ankles burnt Fiske nursed his Hurricane fighter home. Although Fiske landed his aircraft safely back at Tangmere, he had to be extracted from the aircraft by ambulance attendants. Dudley described how Prime Minister Winston Churchill arranged for a large funeral which was filmed, then used in Churchill's propaganda in his attempts to get the US involved in WW2.

After the War, the RAF High Speed Flight was based at Tangmere. In September 1946, a world air speed record of 616 miles per hour (991 km/h) was set by Group Captain [Edward Mortlock Donaldson](#) in a [Gloster Meteor](#). In September 1953, Squadron Leader [Neville Duke](#) flew a [Hawker Hunter](#) at 727 miles per hour (1,170 km/h).

The station finally closed on 16 October 1970, when a single [Spitfire](#) flew over the airfield as the RAF ensign was hauled down.

There followed a lively question and answer session.

R Keir

### **Talk: "Domestic Solar Power - A Case Study" Tuesday 14<sup>th</sup> February by Charles Morgan RCEA**

Charles introduced himself and showed us some slides of his recent engineering achievements, a 1/3 scale model of a Sopwith Pup complete with scale rotary engine and two 5" gauge steam locos. He then covered the principals and manufacture of solar pv panels, leading on to how his own house roof was in need of drastic maintenance. The tiles and lead work were replaced prior to installing the pv panels. We were told that the purpose of the talk, was to go through the experiences, results and to promote discussion, but perhaps most important of all for attendees to consider their own property as to whether they could find a financial benefit. A description of the components of the solar energy scheme were given with photos of this installation and general recommendations. The importance of getting several quotations was stressed and the vital control of the contractor. The government scheme was covered in detail and showing the recent changes that have been made.

The user controls were described and a warning was given not to get too paranoid about using your generated electricity with some amusing examples of the sort of conversations between spouses that could ensue such as "No dear I have just checked the forecast you must wait until tomorrow to do the washing, I can't help it if that is the day that you were going to the RCEA's coffee morning!"

It was made clear that the saving one got through using your generated electricity and feeding electricity into the grid was very small. The Feed in Tariff that is given by the government scheme is the money spinner and that is what makes it all so well worth while. There is no point in giving too much time or energy in monitoring the electricity you are using.

Disadvantages of installing panels was covered including: The capital would not effectively be recoverable, moving house would not entirely be a good idea, although this is debateable, possible theft of panels, durability and maintenance costs of the panels, changes in legislation.

However there are also conceivable problems with other conventional forms of investment such as companies or banks failing. We all know about Equitable life!! Inflation shocks, tax increases, loosing the capital on death. The results from Charles's first year were most impressive. From the capital cost a return of 13.66% was achieved and this is Tax free and was linked to the Retail Price Index. The whole scheme lasting for 25 years. The result was compared to, for example, an Annuity or pension income on which tax was payable. The figure that the solar scheme gives for a standard rate tax payer is thus a return of 17.07%

Charles was extremely pleased with his results and would, knowing what he knows now, most certainly do it again.

This is a very brief summary of his Power Point presentation. He concluded that even with the new payment rates solar power is still well worth looking into. Many questions from the attendees were answered until time ran out!

C Morgan

## **Visit: Queens Harbourmaster Portsmouth Wednesday 29<sup>th</sup> February**

A party 20 members visited the Queen's Harbour Master (QHM) in Portsmouth Dockyard. QHM is the regulatory authority of the Dockyard Port of Portsmouth, an area of approximately 50 square miles that encompasses Portsmouth Harbour and the Eastern Solent. QHM's primary purpose is to protect the Port, the Royal Navy and its vessels and other government assets.

Portsmouth Harbour is a very large natural harbour almost completely landlocked except for the narrow entrance. The approaches themselves are also well sheltered by the Isle of Wight. The limits of the Dockyard Port cover not only Portsmouth Harbour itself, but it includes all the waters from Cowes in the West to Hayling Island down to Sandown Bay in the East with the single exception of Bembridge Harbour. The Naval Base itself comprises only a small part of the geographical area of the Dockyard Port.

QHM has a staff of 28 carry out a wide range of duties to ensure that the 117,000 yearly shipping movements under their control are safely carried out and with the minimum impact to the surrounding area. This includes many of the 5,000 yachts that are licensed to moor in the harbour. All vessels over 20 metres must obtain QHM permission before entering, leaving or moving within the harbour.

The visit was spent in the Harbour Control Room which is responsible for co-ordination of shipping entering and leaving Portsmouth Harbour. Harbour Control is manned 24 hours per day 365 days a year by a minimum of 2 or 3 qualified people, one of whom is always a Admiralty Pilot. A total of 11 Admiralty Pilots not only provide pilotage support to warships entering and leaving the harbour, but also when they move between berths and docks within the harbour. When ships are taken into or out of dry dock, they will always be involved and responsible for the safety of the ships for the majority of the evolution.

Control room staff explained how they controlled shipping and demonstrated the monitoring equipment switching between their two radars and their different display configurations. During the visit they were also monitoring two different diving operations which were taking place in the dockyard. Additionally, they were monitoring dredging operations which keep the harbour silt free. Core drilling was also taking place in the harbour as part of geological investigations to ensure that the new Queen Elizabeth-class Aircraft Carriers, which are planned to enter service in 2016, can safely use the harbour.

The largest ship which left the harbour during the visit was the MV Mont St Michel a ferry operated by Brittany Ferries on the Portsmouth –Caen route. She displaces 35,592 tonnes with a passenger capacity of 2,123 and 830 vehicles. (The new Queen Elizabeth-class Carriers will displace 65000 tonnes)

Throughout the visit the control room staff fielded all of our questions, often using the displays to demonstrate what was meant. The main impression that I had was that control room team are a very professional (many ex RN personnel), in a professionally run QHM organisation. Overall a very interesting visit which demonstrated the dependence we have on engineering – and the people using it!! to ensure that vessel movements are managed safely.

The QHM website [www.qhmportsmouth.com](http://www.qhmportsmouth.com) contains a wealth of information.

R Keir

## **Talk: A Technical History of Sewing Machine Development. Tuesday 13<sup>th</sup> March, Martin Gregory.**

Martin stepped in very late to give his talk when the planned speaker was forced to pullout because of work overload. A well attended meeting heard about the development of sewing machines from the early years of the 19<sup>th</sup> Century. In fact, apart from motors and electronics in modern machines, there have been virtually no new developments since the 1880's.

The talk commenced with a diagram of the only stitch which can be done by hand at the time when all clothing and other fabric goods were stitched by hand. The breakthrough in clothing manufacture, bringing down the cost of clothing came with the invention of the lock stitch which cannot be done by hand, only by machine. Gradually improvements were made in the machines in the way in which the material was held for stitching and then moved past the needle to achieve the final designs. Martin especially mentioned the invention of button hole making by machine for the Yankee Army during the American Civil War.

Martin brought with him several old machines, a very small part of his collection of over 100. These covered the whole development from the very earliest days to about 1920. He described the competition between manufacturers which was intense and where a group based on the Singer company in the USA came to dominate the market.

What was very clear to your reporter was that Britain played no part in the development of sewing machines, it was all American with clones of American machines being made in Germany and sold in this country for one tenth of the price of an equivalent British made machine. There was only one wholly British manufacturer, Jones, whose products Martin described as inferior to Singer. Having said that, the American owned Singer factory at Clydebank was the largest sewing machine factory in the world making a million machines a year although, sadly, it has now been totally demolished.

Martin gave his talk and travelled from Winchester without fee or expenses so the Association has made a donation to his favourite charity, the Twyford Waterworks Trust who are seeking donations to restore a Babcock boiler to working condition.

R Norton

### **Spring Lunch Northbrook College Thursday 22<sup>nd</sup> March**

49 members and partners attended the Northbrook College lunch this year. and it was thought by many to be the best ever enjoyed by the association. The choice of dishes, the presentation and service were outstanding. Of special interest was the optional speciality coffee offer of only £1.00. This was served very professionally on a tray equipped with sugar, cream and choice of spirit by one of the elegantly uniformed cabin staff under training. This function is always popular and early booking is recommended for next year. The cost for a 3 course meal was £12.00 /head including a donation to student funds.

Reply slips follow:

**REPLY SLIP 1**

To:- **Richard Norton, 106 Wallace Avenue, Worthing, BN11 5QA**

01 903 242204 [rwvnorton@iee.org](mailto:rwvnorton@iee.org)

**I wish to attend the visit to the Bluebell Railway Carriage & Wagon Works on 15<sup>th</sup> May 2012**

I intend to join the party for lunch / at Horsted Keynes Station (Please delete as necessary).

My lunch selection is :-

Fish & Chips

Lasagne

(Please delete as necessary)

Name.....(Block capitals )  
Address.....  
.....  
Phone number..... Email.....

**Applications by 5<sup>th</sup> May**  
.....

**REPLY SLIP 2**

**To: Colin Pilling, 84 Marine Crescent, Goring by Sea, BN12 4JH**  
Tel. 01903 522356 or email [colin.pilling@ntlworld.com](mailto:colin.pilling@ntlworld.com)

Can you please reserve me ..... places to attend the **Outing to Sussex Wildlife Trust, Henfield.**  
**14.30 on Wednesday 20<sup>th</sup> June**

**Name:**.....(Block capitals)  
**Address**.....  
.....  
Telephone Number.....  
E mail address.....

I enclose a cheque made payable to RCEA for **£.....£3.50 per person**  
**(Separate cheque please)**

**Applications by 25<sup>th</sup> May**  
.....

**REPLY SLIP 3**

**To; Malcolm Hind, 7 The Castle, Horsham, RH12 5PX**  
Tel 01403251719 or email [malcolmhind@msn.com](mailto:malcolmhind@msn.com)

I/We wish to attend the **Visit: Brookhurst Wood Waste Processing Depot. 10.00 am on Wednesday**  
**18<sup>th</sup> July**

**Name**..... **Telephone**.....  
**Address**..... **e-mail**.....  
.....  
.....  
..... **Number of Persons**.....

**Applications by 23<sup>rd</sup> June.**  
.....