



**ANNUAL REPORT  
for the  
BOARD OF GOVERNORS  
of  
ARMAGH OBSERVATORY & PLANETARIUM**

**BUSINESS PLAN 2010 – 2011**

**BUDGET 2010 - 2011**

**MARKETING PLAN 2010 – 2011**

**Revised DRAFT submitted to  
Board of Governors  
March 19<sup>th</sup> 2010**

Dr T R Mason



# ARMAGH PLANETARIUM ANNUAL REPORT

It is important to re-state the prime function of Armagh Planetarium. *Everything* that we do at the Planetarium is related to education in the broadest sense. We vary the activity and the information we provide to suit each audience. The synopsis listed below splits our work into a number of subsets to better understand the breadth and reach of the educational activities offered by the Planetarium. This provides a snapshot of what we do.

Educational activities at the Planetarium comprise:

## On-site activities

- 1 Direct interaction with visitors to explain astronomy and its associated sciences. This is firmly related to the community support, public understanding of science and lifelong learning objectives of government.
- 2 Working with visiting school children to support their learning, and this is designed to enhance the new NI curriculum and promote the STEM agenda.
- 3 Preparing and presenting regular adult education programmes for Queen's University and local community groups. These are lifelong learning activities.
- 4 Working with special interest groups, including PROBUS groups, senior citizens, community organisations, minority groups, new Targeting Social Need groups, special needs schools and amateur astronomy societies. These are mostly lifelong learning educational activity.
- 5 Answering astronomical queries by email, letter and telephone to astronomical queries from the general public. We receive several such requests for help every day. Many of these come from people who think that they may have seen something unusual or interesting in the night sky and we will attempt to help identify what they have observed. Another popular aspect of this is our meteorite identification service for people who think that they have found a meteorite. Our staff provide an expert assessment and explanation (where possible) their finds.
- 6 Producing Astronotes, a monthly newsletter which is written and edited by Planetarium staff. This is distributed worldwide and also published on our website. All of the back issues from mid 2006 are available for download too. This is an important flagship for what we do, and we receive requests to reprint our articles.
- 7 Presenting weekend, school holiday and summer activities on site. These are geared towards family visitors to the Planetarium and make full use of our exhibits and facilities, most importantly the Digital Theatre.
- 8 Interacting with visitors to the Planetarium. Our visitors are given the opportunity to deal directly with our dedicated education staff during workshops and demonstrations and other hands on activities, making and launching rockets etc.
- 9 Collaborating with bodies including Tourism Ireland, Heritage Island and the NI Tourist Board along with Armagh City and District Council to promote Armagh as a destination for visitors.
- 10 Developing a new training initiative for student teachers. This is a new programme which is being run in collaboration with Stranmillis College. It will involve all of the first year intake in September 2010 and placement sessions for third year students at the Planetarium. This is an educational training activity.

## Outreach activities

- 1 Performing outreach work with schools, community groups, and special events (e.g. BT Young Scientist event at the Royal Dublin Society each January, and Science Week Ireland events in Limerick, Galway, Cork, Waterford and Dublin).



2 Taking the StarDome mobile planetarium to schools and other venues. A visit by the Planetarium's StarDome is our most popular and requested external outreach activity for schools.

3 Presenting talks, guest lectures, demonstrations etc. for anyone who asks: they take place on request.

## **Internet activities**

1 Preparing material for the Planetarium's website. Our website has a range of free educational downloadable resources, including software, posters and PDF documents all designed to support teachers and others looking for solid factual information. Much of this material has been developed by the Planetarium's staff. This fulfills our educational support role and provides an information service for students.

2 Creating and producing instructional products for all age groups, including interactive Digital Theatre shows, live science presentations and interactive workshops to support our role as an educational institution. Demonstration video clips are on the web at <http://www.youtube.com/user/ArmaghPlanetarium> & on Teacher Tube (for example at [http://www.teachertube.com/viewVideo.php?video\\_id=162877&title=How\\_Do\\_Rockets\\_Work\\_Armagh\\_Planetarium](http://www.teachertube.com/viewVideo.php?video_id=162877&title=How_Do_Rockets_Work_Armagh_Planetarium) ).

3 Maintaining and creating content for our social networking, blog and video sharing resources for users on the web. (<http://twitter.com/#search?q=armaghplanet> ), <http://armaghplanetarium.blogspot.com/>) These are recent developments but already seem to be meeting with an encouraging response.

it was an important recommendation of the last audit, which stipulated that we should have a written marketing plan and that the advertising money should be ring fenced.

## **Matters to report**

### **Subsidised staff pension contributions**

The Planetarium, along with a number of other employing authorities in the NILGOSC pension scheme, subsidised staff pension contributions by 4.5% by adding this percentage on to the employer pension contribution rate. The employee then paid 1.5% instead of the normal employee rate of 6%. The Management Committee decided to end this practice for new staff in the late 1990s but three of the longest serving staff still receive this benefit.

In 2009 the NILGOSC informed us that this practice did not comply with scheme rules and accordingly the Planetarium should deduct the full employee rate in the future. In order to compensate the staff for what is an implied term of their contract of employment the Planetarium proposes to deduct the full employee rate and pay an additional allowance to make the net effect cost neutral to the staff affected. We also understand that another employing authority, a DCAL arm's-length-body, has received professional advice that no taxable benefit will arise from this practice in the past. This matter has now been referred to the DCAL and the DFP and we await their advice.

### **Equal Pay awards**

The Trade Union NIPSA submitted equal pay claims to the Industrial Tribunal from members of the Civil Service and from public bodies such as the Armagh Planetarium, whose staff are not civil servants but whose pay is tied to NICS pay scales, on behalf of female staff in Administrative Officer, Administrative Assistant and Executive Officer II and analogous grades who they claim are doing work of equal value to those in the Technical 2, Technical 1 and Professional, Technical and Other grades. The male dominated technical grades enjoyed pay scales of £5k to £6k above those of administrative grades.

In December 2009 the NICS Management agreed with NIPSA that: (i) the administrative and analogous salary pay scales would be changed to the equivalent technical pay scales from February 2009; and (ii) staff whose grades were uplifted would be entitled to back pay to 2003 depending on service. Details of the agreement are on <http://www.dfpni.gov.uk/pay>. This agreement did not extend to staff in bodies such as the Armagh Observatory and Planetarium who are not employed by the NICS.

Following this agreement the Planetarium received a letter from NIPSA dated 19 January 2010 seeking a meeting to discuss the application of the NICS agreement on equal pay to equivalent staff in the Planetarium. Through the DCAL the Planetarium received advice from the DFP Human Resources that as (in the view of the DFP) the Armagh Observatory and Planetarium staff pay negotiation is not the responsibility of the NICS they are not covered by the agreement and it is up to each employer in these circumstances to seek legal advice to make their own determination of liability based on their circumstances, either for the back payment or a requirement to implement the revised pay scales.

These matters have been referred to our lawyers and we have had their preliminary advice which suggests that we could face a legal challenge from staff.

## **Health & Safety Report: March 2010**

### ***Fire Safety***

Weekly fire drill checks are conducted and records are filed. All fire points and alarms are in full working order. We have been informed recently that we need to carry out some further work in the administration building on air ducting and office compartmentalisation to make it more compliant and to facilitate staff escape in an emergency. We will be conducting an evacuation test to provide a benchmark for escape time from this building.

### ***New Staff***

All new staff members are compliant with fire safety checks and procedures. All relevant risk assessments involving new staff have been completed. The latest revision of the Armagh Planetarium Risk Register (January 4<sup>th</sup> 2010) has been distributed to all members of staff.

### ***Accident and near miss statistics and reports***

There has been one minor accident involving a member of the Planetarium staff. Due to heavy snow fall and underlying ice, a staff member slipped at the rear staff entrance, bruising his lower back. This weather was unforeseen and subsequently the area was treated with salt and the snow and ice was cleared immediately, salting was then undertaken morning and evening until the weather had subsided. This accident was not serious and all the relevant paperwork was filed and signed by the first aider on duty and the person involved in the accident.

### ***Items pending***

Fire extinguisher checks to be completed by arrangement through CPD.

Risk assessment and test on Lightning protection to be completed by arrangement through CPD.

Armagh Planetarium is fully compliant with all current health and safety legislation.

Submitted by Health and Safety Officers, Mr. Neil Cullen & Ms. Anna McNally

### **Auditors**

The Planetarium's new auditors ASM Horwath have commenced their audit checks and are following the revised Strategic audit Plan approved by the Audit and Risk Management Committee. Their field work was completed by mid-February, and a meeting has been scheduled to discuss preliminary findings.

### **Freedom of Information section on the website.**

The Planetarium website has been updated with a revised Freedom of Information (FOI) section which spells out the availability of information under the FOI legislation.

## **Staffing Matters**

### **Updates on Child Protection matters and new Safeguarding policies**



We have revised and rewritten our old Child Protection policies taking account of new Safeguarding regulations which are due to be introduced along with the Independent Safeguarding Authority. These regulations have been the subject of a recent review and we await further guidance from the Government on the outcome of this review.

All members of staff at the Planetarium took part in an updated and refresher Safeguarding training session on 11<sup>th</sup> January 2010. The training was carried out by the Volunteer Development Agency.

### **Education Support Officer Recruitment and Training**

We interviewed for our vacant Education Support Officer (ESO) posts in November and had a good pool of candidates to choose from. We eventually offered posts to three new staff who commenced working on January 4<sup>th</sup>.

They have been undergoing induction training for most of January and are receiving intensive training sessions on their roles and the work of the Planetarium with the Theatre Manager, Science Communicator and the Director. They have also taken part in an ISSET teacher training course and all have settled in very well to our routine. All have run workshops and our new interactive shows for KS2 and KS3.

### **Staff Training**

All members of staff attended in-house training on "Safeguarding" hosted by Access NI. The Director also attended additional training sessions on: Risk Registers by DCAL and Visual Awareness training.

### **Digistar 3 Theatre Backups**

Following recommendations of the auditors last year, we have a systematic backup of the Digistar's hard disk drives (HDDs) in place. We have two sets of spare HDDs and use Symantec Ghost software to clone the disks. All of the HDDs are shut down, and then each machine is rebooted using the Ghost disks and the existing disk is copied exactly onto the HDD in the spare drive bay. Each clone takes about 1 hour to complete, so we normally do this at night after the Planetarium is closed. We can run 4 clones at once, if we run any more it becomes difficult to keep track of what is running as all of the drives are controlled through a single KVM switch.

Once the disks are cloned they need to be remapped and assigned their proper drive letters: the host drive is Drive S: and all of the graphics processors and the audio computer are mapped as drive V. Each of the partitions need to be shared on the internal network and once this is completed for each of the eight machines, the whole Digistar 3 computer system is rebooted. The software remaps itself and the system starts as usual. We then test that all of the rack GPs are working correctly and that we have working copies. This involves restarting the system using the cloned disks. The new clones are dated and labelled, and the next backup uses a third set of disks. We keep the backups in different places and if there is a drive failure, they are quickly swapped with working disks.

### **Cloud computing and mobile devices**

The Planetarium is experimenting with cloud computing and working with mobile devices, we are involved with a Discover Science and Engineering Project funded by the Irish government to explore this booming medium. We have just set up social networking links, and the Planetarium now has a Twitter site, a blog, and a Facebook presence. This is how many young people interact with the media and we have also set up a Teacher Tube site providing short video clips for teachers to use in class. These mobile communication methods will increase our on-line profile and contribute to a viral marketing project for the Planetarium. The links are provided below:

<http://twitter.com/ArmaghPlanet>

<http://armaghplanetarium.blogspot.com/2010/03/bulls-eye.html>

<http://www.youtube.com/user/ArmaghPlanetarium>

[http://www.teachertube.com/viewVideo.php?video\\_id=162877&title=How\\_Do\\_Rockets\\_Work\\_Armagh\\_Planetarium](http://www.teachertube.com/viewVideo.php?video_id=162877&title=How_Do_Rockets_Work_Armagh_Planetarium)



## HIGHLIGHTS OF THE YEAR

The following list provides some of the highlights of the past year.

### INTERNATIONAL YEAR OF ASTRONOMY

The Planetarium took part in a number of International Year of Astronomy events and they are tabulated below. The total number of participants was 25000.

Month	Date	Event	Who
<b>January</b>	19-26	Indian Planetarium Society Goa	TM
<b>February</b>	11	Victoria College Belfast Parents evening event	TM
	19th	King's Hall Prof Carl Murray	RH TM
	21st	Tara Centre Omagh	CJ TM NF
<b>Mar</b>	2	100 hours Astronomy webcast	RH TM
<b>Apr May</b>	29th - 3rd	Bibliotheca Alexandrina Egypt	TM
<b>May</b>	8	Omagh Library	ESO
	12	Larne Library	ESO
	13	Whiterock Library	ESO
	14- 16	Royal Observatory Greenwich BAP meeting	TM
	14	Balmoral Show Belfast	AK
	16	Ballyclare Town Hall Public Outreach	ESO
	19	Enniskillen Library	ESO
	26	Hollywood Library	ESO
	27	Downpatrick library	ESO
	28	Cookstown Library	ESO
	21-26	Paris & Toulouse APLF meeting	TM
	<b>July</b>	8	Carolyn Porco She is an Astronomer
<b>Aug 14 -15</b>	14-15	Tall Ships Event Belfast	NF
	16	Mount Stewart Weekend	NF AK
<b>JULY AUGUST</b>	Both months	Star Wars Special Summer Exhibit	
<b>September</b>	19	Extra Solar planets Don Pollaco	TM
	24-25	Letterkenny Public Events	NF OOD
	30	STEM bus launch Stormont	TM RH
<b>October</b>	17th	IAA Stardome event	
	22-25	Bradford College and Space Connections Teacher Training and Yorkshire Sculpture Park events	TM TM
<b>November</b>	5	BT Harper She is an Astronomer	MP TM
	12	Boys Brigade at Mullaghbrack pm event	TM
	20	Video Conference Teacher Training session	TM
	24-25	Sentinus Event at King's Hall	TM



<b>December</b>	4	Kilkeel BB evening event	TM
	11	Irish language launch	TM

## **NEW SHOWS & WORKSHOPS**

Following the submission of a report from the Education and Training Inspectorate (ETI), the Planetarium noted that there was a need to radically overhaul the way in which we worked with school children. This has been accomplished and we now have a completely new programme for all age groups. These new shows have been made in house and are tied to relevant quizzes in the theatre and interactive workshops outside. We installed a new touchscreen computer which allows a single staff member to run the interactive shows and the quiz from the front of the theatre. We are still working on new workshops and shows and innovative ways of cementing the educational outcomes of visits.

## **SUMMER DISPLAYS: STAR WARS**

Last summer we had a special summer exhibit based on an exhibit of Star Wars artefacts and helped out by the Emerald Garrison, the local Star Wars reenactment group. This formed an interesting and very authentic display with various mannekins, weapons and dioramas relating to the popular Star Wars franchise.

## **APOLLO DISPLAY**

As 2009 was the 40<sup>th</sup> anniversary of the Apollo 11 Moon landing we set up a special display in the Kepler Room which ran for most of the year. It comprised a number of illustrations, information panels and a constant loop video of the Apollo 11 mission. We also were loaned a number of models and lunar meteorite samples which were on display. We borrowed the display cabinets from the Armagh Museum and are most grateful for their help.

## **NEW METEORITE DISPLAY**

As the Ulster Museum was due to re-open in autumn 2009 after its major refit, they wanted to reclaim the meteorites which we had on loan from them through the good offices of Dr Mike Simms. As we wanted to continue to display them, we took steps to replace the Museum meteorite samples in our display as they are an important element of the story of the Solar System and offer an opportunity to tell spectacular stories. We purchased two specimens, a 140 kg nickel iron sample from Argentina and a polished pallasite from Magadan in Russia. These specimens provide us with the biggest and heaviest metallic meteorite on display in Ireland, plus a sample with large interlocking metal crystals and large olivine (peridot) crystals. We also relocated the Sprucefield fragment of the Bovedy-Sprucefield meteorite, which also fell 40 years ago in 1969.

TRM

March 10<sup>th</sup> 2010



## **BUSINESS PLAN 2010 – 2011**

**Revised DRAFT submitted to  
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Dr T R Mason



# Armagh Planetarium: Business Plan 2010 - 2011

## Armagh Planetarium's Mission

Armagh Planetarium's mission is to advance and promote the knowledge and understanding of astronomy and related sciences to all members of the community.

## Armagh Planetarium – DCAL strategic focus

This is in accord with the strategic focus of the Department of Culture, Arts and Leisure that has as its overall aim the creation and maintenance of “a confident, creative, informed and vibrant community.” The key objective of the Department (and of Armagh Planetarium) is: “to protect, nurture and grow our cultural capital for today and tomorrow.”

This strategic focus has led to our deliberate positioning of Armagh Planetarium as a place where impressionable young minds can be encouraged to make career choices in the sciences. The choice it appears may often be made subliminally, to the extent that the people who have given me feedback have said that they did not realize the full extent of the Planetarium's influence until much later when they were more mature and involved in their career in science. They related vivid memories of seeing things in the Planetarium's theatre which inspired them, and filled them with awe. These people include Dr Mike McKay, now head of human spaceflight at the European Space Agency (ESA) in Darmstadt, Professor Carl Murray of Queen Mary College University of London, involved in the groundbreaking Cassini Mission to Saturn and Dr Mark Doherty Head of the EO Exploitation and Services Division, Earth Observation Programme Directorate, based at ESRIN, Frascati Italy.

It is difficult for the Planetarium to quantify such a socially important target, which distills down to how many children are inspired into scientific careers because of their visit to the Planetarium, or their experience on an outreach visit. Realistically, to discover these outcomes is a 15-year experiment, and my successors in the Planetarium Director's post will only discover this beneficial influence much later. I have been pleasantly surprised when a visitor tells me that their career choice in science or to become a teacher was influenced by a visit to the Planetarium when they were at school.

The Planetarium also acts as a repository of information, and we have an information email address that receives a steady stream of requests for explanations of unusual sightings in the night sky. This includes requests to explain the bright “star” which is so obvious in the night or early morning sky. These people are usually seeing the planet Venus and we encourage them as amateur observers to continue to watch. Thus, the Planetarium attracts adult visitors whose curiosity about the natural world is intact.

Our most pressing need is to substantially increase the number of visitors coming to see our shows and displays. We continually strive to update and upgrade our equipment as we are part of an extremely fast evolving area, with faster processors, more memory and greater pixel counts on our dome leading to better images to fire the imagination.

## Details of the coincidence of the Planetarium's aims and Objectives and the DCAL's Public Service Agreements

The Planetarium's work promotes Public Service Agreements 2, 5, 9, 10, 19, & 20.

**PSA 2** promotes the achievement of skills for prosperity and the Planetarium is an active supporter and promoter of the STEM agenda that will allow more children to choose careers in scientific subjects.

**PSA 5** promotes tourism: the Planetarium is a unique venue in Ireland and an important part of the cultural infrastructure of Museums and Galleries. It is a well-known tourist attraction around the world, and attracts local and overseas visitors to experience the Planetarium, especially during the summer season. Our advertising is designed to promote the Planetarium as widely as possible to these potential visitors.



**PSA 6** relates to children and the family, the Planetarium is a place where families can come with their children to experience the amazing depth of the cosmic story. We promote curiosity, an essential childhood skill.

**PSA 9** is about contributing to Northern Ireland's economic, health and educational goals by increasing participation and access to Culture, Arts and Leisure activities. The Planetarium runs a events for all members of the community and actively supports minorities, eg. the Chinese community. It provides easy access to the space sciences for all of Northern Ireland's population as well as visitors from the Republic and further afield. The Planetarium buildings are a significant cultural asset. As many of our visitors are young people we also provide an environment promoting future career paths in science, and we provide a safe place for children to visit as part of their school community or as part of their family.

Our Outreach programme achieves the same outcome, and our adult classes provide for the enhancement of the population's understanding of science and helps promote the establishment of a scientifically literate and well informed community.

**PSA 10** is about helping children and young people achieve their full potential through education. The Planetarium's work is primarily education and our activities support the needs of children of all age groups. In addition, people of all ages are able to learn about science and astronomy in an easy accessible way. We welcome people of all ages and make a special effort to ensure that we are inclusive for those with special needs, learning difficulties or any form of disability. Our policy is very clear, that we will make the effort to provide a stimulating and informative visit to everyone.

We also do this through our recruitment policy which does not seek to exclude people but rather to nurture and encourage staff to achieve their full potential by stretching themselves and discovering talents that they may not have fully appreciated or used.

**PSA 19** is about raising standards in our schools and the Planetarium works to achieve this by supporting the new NI curriculum and providing curriculum broadening experiences for school visitors. Our Outreach work also promotes his objective in the same way. We also service schools form all parts of the educational spectrum, including special needs, nursery, and all of the key stages.

This part of the report reviews the Planetarium's performance during the past financial year, and the data are projected to March 31<sup>st</sup> 2010.

## Review of Key Objectives for the 2009 – 2010 Financial year

Armagh Planetarium's key performance indicators for the 2009 – 2010 Financial year were:

ARMAGH PLANETARIUM					
Key Performance Indicators	Actual (31-Jan-10)	Percentage of budgeted Target to date	Projection to 31/3/10	Projected percentage To end of Financial year 31/3/2010	Budget Business Plan Figures
Visitor numbers	37536	89	40500	93	42000
Outreach numbers	16641	111	17500	116	15000
TSN numbers	1086	109	1100	110	1000
Admissions income <sup>1</sup>	£123634	82	£140000	93	£150000
Outreach income	£10286	73	£11000	78	£14000
Shop and Mail order income	£69600	107	£75000	115	£65000
External income as % of total income	38.5%		33.5%		31.7%
Total cost per visitor/ outreach	£12.10		£14.4	84	£14.3
Administration costs as % of total costs	14.4%		14.6%		13.6%
Google site ranking (max 10) <i>*Google site ranking comparison: See Table 1</i>	7				To be monitored
Webtrends <sup>§</sup> : Internet hits & Google Analytics*: Website stats		121724 page views <sup>§</sup>			To be monitored
		35510 3D site hits <sup>§</sup>			
		2000 video hits <sup>*</sup>			
Absence – days	32		37		To be monitored
Absence – percentage	1.8%		1.50%		To be monitored

### NOTES

Date of last review is February 4, 2010

Visitor % satisfaction ratings to be monitored <sup>2</sup>	Show	Overall	Staff	Displays	Booking
	88	85	81	84	80

7/10/2010

## **Economic Appraisal Targets Extracted from DCAL's 2001 (modified 2004) Review**

The targets listed below are the aspirational targets which were used to provide a basis for the decision to proceed with the refurbishment of the Planetarium. The process and decisions taken were influenced by three reports. The first was dated October 2001 and this reported on the Research and Evaluation Services work, along with a technical assessment by Envision and Barnett and Associates. This report looked at options for the Planetarium's future. An addendum, carried by DCAL's Economic Services Unit in November 2002 included an economic appraisal to judge the viability of the options considered in the primary report. This report did not consider a refurbishment option to modernize and upgrade the Planetarium building; this was considered in a further second addendum in July 2004. The targets listed below are drawn from this report.

### **ASPIRATIONAL TARGETS**

1. Be, and to be regarded as being, the leading centre for space, astronomy and related science education and advice in Ireland;
2. Provide a unique visitor experience that is balanced in terms of formal education and fun based learning by 2008;
3. Make a significant contribution to the implementation of the Northern Ireland Curriculum through the medium of space and astronomy education by the expansion of the outreach to schools to a maximum level of 200 visits per annum;
4. Create, promote and attract cultural tourism by increasing visitor numbers to at least 60,000 per annum by 2009;
5. Be, by 2008 (and remaining), at the leading edge of centre-based and outreach learning through the use of quality, state-of-the-art resources;
6. Provide equal opportunity for all to access the wonders of space and astronomy, irrespective of social, economic, mental or physical well being by 2008
7. Beyond year 2, to recover annually at least 50% of all recurrent costs.

We consider these to be aspirational targets, the one which is most obviously lagging behind the target is the visitor numbers. To provide a comparison the National Space Centre in Leicester and its planetarium attracts 250000 visitors per annum. The estimated hinterland of large cities in the UK midlands contains a population of approximately 6 million. Thus the NSC attracts 4.16% of this population. The population of NI is 1.75 million and the Planetarium currently services 2.4 % of the local population.

We consider that we largely have achieved bullets 1, 2, 5, 6, and 7: we are working toward significant change relating to bullet 3 and we currently earn 55% of the grant awarded by DCAL (bullet 7 recurrent costs.)

## **Review of the KPI targets**

### **Financial Outcome 2009/2010**

Details of the financial projection for 2009/2010 are shown in Appendix 2. At present we anticipate that we will be able to achieve a balanced budget for the year. We have taken into account the cost of changing the pay scales of AO and ESO grades back to February 2009 (£6.1k) on the assumption that there is a contractual obligation on the Planetarium to follow the changes to NICS pay scales arising from the Equal Pay agreement. The liability for back pay to 2003, estimated at £23.5k, is not in the projected outcome. The precise position will not be known until we receive legal advice on our obligations in relation to the NICS Equal Pay agreement.

### **Visitor numbers**

The annual final projected total of on-site visitor numbers is in line with the predicted number but this is still too low, and we need to boost this figure to maximize visitor numbers. It is 87% of the predicted target.

To address the shortfall we have taken a number of actions: in line with last year's audit recommendations we have a written marketing plan (Appendix 1). Unfortunately implementation of this is now threatened by a new DFP ruling on Equal Pay that has been passed on to us by DCAL: a decision which has the potential to seriously impair our plans. Following instructions from DCAL/DFP we are seeking legal advice to appeal the decision and have it reversed.

To improve our visitor numbers:

1. we must enhance the Planetarium's image in the public mind by more advertising;
2. we need to attract more schools to visit the Planetarium;
3. we are working with NITB and Armagh City & District Council on new advertising which promotes the Planetarium as a unique NI attraction and as a flagship Armagh attraction;
4. we are offering summer teacher training courses under the auspices of the RTU;
5. we are starting a new video conferencing facility to improve communication with senior schools.

### **Outreach numbers**

The Planetarium continues to devote time and effort to working off-site as part of our Outreach efforts. We consider that this is an important part of our work, especially as it helps us to reach smaller schools that may be less able to travel to visit us. This at 111% of target: and this figure has been achieved despite the effect of staffing changes which meant that we were not able to service outreach requests for December and January as we were short staffed.

### **Virtual Planetarium visitors**

We launched our new, more interactive website in the middle of last year and now also assess the statistics using Google Analytics, which provides a better index of use than the older stats pack (Webtrends) that we had. We have made more content in-house for the site, and the video clips are achieving a good hit rate. Our status on Google page ranking is excellent as we expected this to fall with the posting of the new site, but it is currently high at 7 (Table 1). This ranking is excellent and it is a very precise rating of the site's popularity. This is because Google controls it very strictly. The rating compares most favourably with other well-known science and educational organizations websites (Table 1). We have used Webtrends to obtain the numbers of hits on the 3D site which is the virtual planetarium part of the site.

### **TSN numbers**

This number is on target. We continue to support special needs groups, both adult and juvenile, and are keen to increase the numbers of special needs children that attend the Planetarium.

### **Income from admissions**

The final figure is predicted to be 10% under target and is directly related to the number of visitors passing through our doors. The past year has been a difficult business environment as everyone is concerned with saving money and economising on budgets.

### **Income from Outreach Services**

This figure is slightly under target and this is due to staffing issues already mentioned. The figure is predicted to be 93% of target.

### **Income from shop and mail order sales**

This target has been exceeded and is currently 105% of target.

### **External income as a % of total income**

This figure is predicted to be 134% over budgeted figures.

### **Total cost per visitor/outreach**

This figure is higher than we would like but it is under the budget target.

The overall on-site visitor numbers is still disappointing, considering that the feedback from visitors was overwhelmingly positive with very few complaints; it is just that we did not have enough of them.

The overall conclusion is that we must maximize the visitor numbers and this means that we must advertise more to attract visitors to the Planetarium, while maintaining a varied set of shows to cater for all of the different age groups. We intend to target teacher training events this coming year and this is reflected in the marketing plan for the year to come.

### **Administration costs as percentage of total costs**

This has risen slightly by 0.85%.

## Google Page Ranking Information

We need to standardize how we assess our electronic presence, and are planning to work with DCAL's statistics unit to improve and refine these data. Google Analytics and Google page rankings are the best available, and we have extracted information and present it in this new table 1. It helps to explain how the Google page rankings work and provides some rating comparisons with other organisations. Google rate the sites on the quality of the links that other sites make to ours, thus it is a rank which is unaffected by what we can manipulate to increase our traffic, but which reflects what other external organisations think of the value of our site and their willingness to link to it. We also think that Google Analytics statistics provide a clearer and more accurate figure about how our site is used.

Colleagues at the Smithsonian Air and Space Museum, one of the premier museums in the world also consider their electronic visitors numbers to represent part of their outreach programme. We have made significant improvements to our site since the middle of last year and continue to add to it and expand how we can contact and be contacted by e-visitors by setting up Facebook, Twitter and blog elements to the site. The Planetarium's video clips have been uploaded to YouTube and Teacher Tube and are recording a steady hit rate.

Site name	Google Rating (out of 10)
Space Connections UK	4
Giant's Causeway	4
UTV internet	5
Newcastle Planetarium	5
Techniquet Cardiff	5
Greenwich Planetarium	6
W5 Belfast	6
Dynamic Earth Edinburgh	6
Madame Tussauds London	6
Ulster Museum	6
Ulster Folk & Transport Museum	6
Blackrock Castle Observatory	6
Armagh Observatory	6
Vancouver Planetarium	6
Beijing Planetarium	6
Melbourne Planetarium	6
Cite de L'Espace Toulouse	6
Smithsonian Air & Space Museum	7
Royal Observatory Edinburgh	7
Science Museum London	7
<b>Armagh Planetarium</b>	<b>7</b>
European Space Agency	8
Google search engine site	8
Microsoft.com	9
BBC	9
NASA	9
	Feb 1 <sup>st</sup> 2010

**Table 1 Google Page Ranking site ratings**

# BUSINESS PLAN 2010 – 2011

- The primary Key Performance Indicator is visitor numbers, as this reflects the core business of the Planetarium.
- The projected visitor figures are based on a conservative estimate of how many people will visit the Planetarium: we are estimating a total of 43000 visitors during the year.
- Our Outreach target for 2010/2011 has been set at 10000.
- The fixed budget for 2010/2011 is based on the appended spreadsheet (appendix 1).
- We are working to support the aims of the Programme for Government and the Department’s Public Service Agreements, as the desired outcomes overlap and coincide with the Planetarium’s aims and objectives. The primary aim of the Armagh Planetarium is educational: to promote the public knowledge and understanding of astronomy and related sciences. To do this effectively we need to be recognised as the leading centre for space science, astronomy and related science education and advice in Ireland.
- Since the 2006 Planetarium re-opening we have rebuilt our capacity to produce shows and live demonstrations in-house. We continually review the Planetarium’s operation and its educational services as an important support and curriculum-broadening component of the new NI curriculum, and our aim is that every primary school child should visit the Planetarium at least once during their early school career. The Planetarium should be a named STEM resource for schools. To achieve this aim the following key objectives have been identified.

## Key objectives for the 2010 – 2011 Financial year

### Key Performance Indicators/targets (KPIs)

To measure our effectiveness in meeting these objectives in 2010 - 2011 we will record performance against targets for the KPIs as set out in the table below:

Key Performance Indicators	Target
Aspirational Visitor numbers (Economic Appraisal target)	60000
Predicted Visitor numbers	43000
Outreach numbers	10000
Virtual Planetarium visitors	To be monitored
TSN numbers reached included above	1000
Income from admissions	£143.3K
Income from Outreach Services	£10K
Income from shop and mail order sales	£75K
External income as a % of total income	31.9%
Total cost per visitor /outreach	£14.1

In addition to the above we will:

- track staff absences due to illness against the DCAL target of 5% for 2010-2011;
- monitor our website statistics;
- monitor visitor satisfaction ratings.

These data will be presented at the periodic Accountability meetings.

## **Actions required in 2010/2011 to achieve KPIs/targets**

The past year of recession has been a difficult environment in which to sell a service. We adjusted our prices and discounted admission prices to increase numbers and while the public figures are reasonable, the schools obviously were being more careful to preserve their budget and their attendance figures are low. This must be our primary target this year, while seeking to maintain the family visitors.

1 We are seeking to broaden our message by getting involved in teacher training partnership with St Mary's and Stranmillis teacher training colleges. We have been working with retired ETI inspector to organize placements of Stranmillis third year trainee teachers in the Planetarium as well as running special induction sessions for the first year trainee teachers at the Planetarium to demonstrate what we can offer teachers to support their classroom activities. We will show them the full spectrum of our shows, workshops and demonstrations and use their skills to develop new material for the workshops that will be suited to the different age ranges. St Mary's will be brought into this as well.

2 We are offering a new element to our business via new video conference linkages. This is being installed as part of the C2K network that is installed in all NI schools. The HP staff running the system see the Planetarium as an important element of the video conferencing network, and that our presence and activities will support the STEM agenda. We hope that we can evolve this into a revenue-earning activity, but in the short term seek to make sure that all of the local schools know about our ability to interact with classes in real time. We have a provisional model which will involve: (a) speaking to the class teacher before we have a link set up; (b) have a video link session with the class and the teacher; (c) include a trip to the Planetarium to cover a supporting topic which cannot be done outside the theatre. The visit will also include one of our newly designed workshops, and there will be a follow up video link session. All of this is being prepared and validated in consultation with ex ETI inspector Irvine Richardson.

3 We now have a written marketing plan, see Appendix 1.

4 We have applied for Regional Training unit Funding as part of our plan to run a new 4 day teacher training session in the summer for teachers of the classes which are underrepresented in our school visitor profile, Key Stages 2 and 3 and have new shows and workshops fully completed and nearing readiness. We are planning other monthly events throughout the year. We will continue to support science festivals and special events locally and in the Republic, and following the recognition by the Education and Library Boards of the importance of the new STEM (Science, Technology Engineering and Maths) programme we are actively promoting our ability to help teachers deliver the STEM objectives. We anticipate that this will lead to a greater participation with KS3 school parties. We also are part of a large multinational consortium applying for EU framework 7 funding for a project titled Galileo Teacher Training Project (GTTP).

5 We will have our educational offerings quality assured (QA) by the Education and Training Inspectorate (ETI). This is in accord with our intention to continue providing curriculum support for schools. It is not our business to do the teachers' job, but rather to show how we can show the school visitors curriculum broadening activities. This process has started.

## Staff Resources

Three of our four Education Support Staff left during the past year to move on to a travelling career break, enrolled for a higher degree and to take up a post at W5. This created a difficult transition period in December and January, but we recruited three new contract staff and have trained them during January. They have also brought new skills to our team: one has a degree in marketing; another is a qualified teacher and the third is also a graduate.

## External Outreach

We continue to collaborate with our colleagues at the Cork Institute of Technology (CIT) and Blackrock Castle Observatory (BCO) in Cork city. The Outreach there has been successful and they have talked to over 14000 people since mid-November 2008. Thus, our external joint Outreach service has been maintained in a part of the island where it has little or no impact on our on-site visitor numbers, but which achieves a high profile for the joint venture. The following is a joint statement relating to the joint Armagh-Blackrock StarDome operation.

*On Sunday November 16th 2008, Blackrock Castle Observatory (BCO), in association with Armagh Planetarium, launched the StarDome, a portable planetarium, in City Hall, Cork at Discovery 2008, Cork's Interactive Science Exhibition, in a joint effort to increase public awareness of astronomy.*

*Armagh Planetarium and Blackrock Castle Observatory operate a Memorandum of Understanding sharing aspects of their outreach programme including the StarDome. Speaking on behalf of Armagh Planetarium, Robert Hill, Manager of the Northern Ireland Space Office, said "This is a tremendous bonus to the outreach activities of Blackrock and Armagh and will bring the excitement of space and astronomy to classrooms and venues across the country. Armagh Planetarium is delighted to collaborate with the staff of Blackrock Castle Observatory and recognises the fantastic work of staff at Blackrock. It is hoped that this initiative will just be the start of a very rewarding relationship for the two facilities and we look forward to working together to further inspire young people to take up science and technology related subjects and endeavours that will be crucial to the future economy of all of Ireland. The Stardome has helped bring about curriculum change in the North, with the newly revised curriculum there now having astronomy and space science as key topics for ages 11-14"*

*Since 2008 the StarDome has travelled from Donegal to Dublin and extensively through Munster bringing the excitement of space science to a wide audience. In excess of 14 000 individuals have experienced the StarDome through BCO facilitation, including all ages of primary and second level students as well as members of the general public. The StarDome lived up to its portable reputation when it travelled to the Science Picnic in Warsaw in May 2009 and was also enjoyed by the concert crowd at the Electric Picnic in September 2009. It has appeared at the BT Young Scientist Exhibition 2009, with a two show wait for the queuing crowds and was similarly popular at the University of Limerick Open Day in Nov 2009.*

*Schools appreciate the content that has been devised by BCO staff, with curriculum relevant programmes for all age pupils. The Geography curriculum in particular is well served for primary students, with "Earth's Place in Space" explored. Schools have said that a visit by the StarDome is "the best thing we've ever had here" and value the fact that a visit counts towards the Discover Science and Engineering (DSE) Awards of Excellence as a part 2 visit "Bringing a scientist to the school". StarDome also offers material for junior and senior infants (ages 4 and 5) inspiring all ages about the wonders of the Universe.*

## Public Shows

Following the last financial year's new shows "We are Astronomers" and "Invaders of Mars" we have decided to concentrate on making new shows that will service new audiences. Our four seasonal versions of Pole Position were scripted, designed and programmed in-house by the Theatre Manager. These are popular live shows narrated by the education staff member in the theatre and show visitors the constellations and sights in the night sky as the seasons progress.

## School Shows

During the past year we obtained funding from the National Lottery and the Ultach Trust for the translation and editing work needed to convert existing shows into Irish. We have launched our translated Irish language shows and are taking bookings for them, two are finished and two more are being prepared. It is likely that we will receive further funding to progress this project in this financial year.

We are currently working with an ex ETI chief inspector to overhaul our school visitor programmes. We are emphasizing live shows and greater interaction with Planetarium staff as the gold standard. We have developed a new visit programme for schools, which includes a live interactive theatre shows and workshops. The average trip also includes time in the shop and an opportunity to look at the exhibits. The interactive shows are all new and have been made in-house. We have new KS2 & KS3 interactive shows for schools related to the new NI teaching curriculum. Other new shows and workshops are being prepared and should be ready by May. We keep this aspect of our work under continuous review. Another Armagh produced interactive show called Destination Earth is being revised and updated for KS2 children, and will provide a further new offering for our primary school visitors. We intend that all of our schools programmes will be interactive and that we will only rarely use rendered shows.

To assess the value of this output it is worth noting that the purchase price of Planetarium shows averages \$10K. They involve a lot of primary research and computer graphics work as they need extensive manipulation to be presented through the D3 system.

We have a new pre-primary show which was completely made and scripted in house. We currently plan to render this show as we believe that there is a gap in the market for junior story type shows. We intend to test this and see if we can sell this show to generate some revenue.

Curriculum development and teacher training are topics in which the Planetarium is increasingly involved, we are planning to run more teacher training workshops in the summer, and already run intensive two day workshops along with the International Space School Education Trust (ISSET). These are designed as teacher training that will allow them to leave with the ability to design "Space Camps" that can be run at their schools. We have also approached St Mary's and Stranmillis colleges to try and set up placement programmes that will allow trainee teachers to experience the Planetarium as a curriculum enhancing experience.

We have modified the Digital Theatre layout so that our new shows can be run from the lectern at the front of the theatre. We have installed and tested new network cabling, a duplicate sound controller, and a small touch screen tablet computer which drives the Digistar 3. This has been programmed to run the Digistar 3 remotely through pre-programmed buttons. It enables us to run complex interactive shows with terminal quiz sessions with a single staff member which frees the others up to run the workshops outside. We plan to make and develop more new NI curriculum related shows this year.

All of this work and change of pace follow the recommendations of the recent 2009 ETI audit of the Planetarium's operations. This suggested that we needed to pay greater attention to the variety of learning outcomes that can be achieved by school visitors. We are working to achieve this aim.

## Exhibition Area & Displays

We need to further develop and renew our display spaces. We plan to seek more up-to-date display items within our limited budget by approaching our colleagues at the European Space Agency who have helped in the past. Last year we completed a planned purchase programme which allowed us to replace the meteorites on display. These are substituting for the specimens which we had on loan from the Ulster Museum during their refit. Our new 140 kg nickel iron meteorite from Argentina is the largest on display in Ireland, and staff are all trained to deliver short and long workshops on meteorites.

We continue to seek out and source new displays for the very young visitors as we have very little to keep them occupied.



## **European collaboration: Northern Ireland Space Office (NISO)**

Our contribution to the European astronomy scene now includes not only the Northern Ireland Space Office (NISO) at the Planetarium, but also a presence on the International Astronomical Union (IAU).

Our lobbying also has firmly placed Armagh Planetarium on the European agenda, and we are involved in new projects with the Faulkes Robotic Telescopes, Earth Observation schools programme (European Union Hands on Universe project), and have applied for EU funding to do more, in partnership with our European colleagues. We also continue to work with the European Space Agency, EURISY, UNESCO and the British Council on various international projects that are operational or being planned. Planetarium staff serve on influential committees of many of these agencies which are deciding the future direction of space education.

## **Worldwide collaboration: International Planetarium Society president and planning**

The Planetarium continues to punch above its weight on the international scene and evidence of this is the Director's role as IPS President. This entails working with the other IPS officers to make sure that the professional planetarium organization represents the interests of its worldwide membership. It also involves travelling to other places where the planetarium professionals are not yet fully integrated into the worldwide community. A visit to India last year has translated into a bid by the Indian planetarians to apply to become an affiliate organization of the IPS. This has been promoted and encouraged by the Director's IPS presidential influence. A further opportunity for IPS has opened at a new science centre and planetarium in Kuala Lumpur and the IPS international development officer, who is based in Tasmania will be following this lead.

## **Targeting Social Need (NTSN)**

We include as many underprivileged people and/or organizations in our work as possible, mindful of the New Targeting Social Need programme (NTSN). The Outreach Programme lends itself well to this work and we continue to offer an evening adult education service in Belfast and Omagh. One of the courses is in association with the Queen's University of Belfast. The other is presented at the Tara Centre in Omagh, which is a centre for community based adult learning. Feedback has been extremely positive and we will continue these courses in the autumn. This accords with government aims to create a more scientifically literate population while promoting lifelong learning.

## **Science Technology Engineering & Mathematics programme (STEM)**

The Planetarium supports the STEM programme for schools, allowing them to set up an enhanced provision of Science educational activities. We have formally entered into a partnership with Victori College and their feeder primary schools and will be delivering content to them this year. We have made up new programmes for this project and plan to expand it to meet the demand. The STEM programme will allow schools to have the Planetarium staff visit the school as well as make a visit to the planetarium, so that they can have the benefit of both experiences.

## **Financial Plan**

Details of our projected income and how this will be spent are provided in the attached financial appendix 2. It should be noted that our earned income is essential to help us maintain the operational flexibility to make the most of opportunities as they arise.

When we are very busy we are working at full staff capacity and successful off-site and weekend events lead to an increase in overtime. Similarly putting on more evening events also affects this budget line. We are able to better control this aspect of the business by using our full-time Education Support Officers who fill the positions formerly occupied by temps during the summer. This operational experiment is working very well and is now an integral part of our normal operation. Reducing our dependence on temps has resulted in a more stable operational rota.

## **Advertising & PR**

A separate marketing plan is appended to this report (Appendix 1). One of our new staff has a marketing degree and she has been allocated responsibilities relating to the marketing planning.

### ***Astronotes***

Our in-house flagship publication AstroNotes is distributed all around the world: we also publish a PDF version on our website and have posted PDFs of all of the back issues. Articles have been reprinted and used by other organisations and we gain a great deal of international publicity through this publication. All of the articles are written and edited by Planetarium staff.

### ***Website***

Like all modern businesses our website is a critical part of informing the public and schools about our operations. The Planetarium's website was completely redesigned last year and relaunched mid year. The new site better exploits faster internet speeds and we have more video clips, including science demos, as well as a selection of free stuff for web visitors, all made in house. We are planning to make more use of our flagship website to advertise our activities.

### ***Digistar 3 upgrade & technical issues***

In our technical planning for the next 5 year strategic plan, we must upgrade our Digistar 3. This can be achieved in two ways. The first is a service contract with Evans & Sutherland- Spitz for the Digistar 3 digital theatre equipment. Such a contract would run for 5 years and would involve a complete hardware and software replacement of the current D3 with the newer D4 configuration (Appendix 3). The second option is to seek full capital funding for an upgrade to the new Digistar 4 model. The Digistar 4 is a more compact system with a completely new operating system.

It is worth mentioning that the planning for the 2006 refit of the Planetarium contained an extensive assessment of the critical issues that would lead to greatest stability and least downtime of the Digistar 3 computers and the BARCO projectors. We have had a very low downtime and few problems as we maintain a constant operating temperature and do not stress the electronics by multiple power cycles. In our assessment of other reported D3 operator's problems almost all can be ascribed to a lack of discipline with network connections and subsequent viral infections of the systems, allied with unauthorized downloading of software, and amazingly, playing computer games on the machines while they were are running shows. We maintain a very tight grip on the system. It is never connected to the internet, nothing is loaded without authorization, and only two staff actually work with the operating system and loading of shows. We attribute this more disciplined approach to the good operational record.

We keep critical equipment spares to ensure that our downtime is minimal, and this is a critical management operating target. We have a spare BARCO projector and other D3 computer spares that should alleviate any near term future problems, but this needs continual monitoring to keep the risks low. It is the nature of computer equipment that it rapidly ages and we must keep up-to-date by upgrading to the most modern graphic cards and maximize on card memory, as well as keeping well informed about the latest developments in projector resolution and projection technology.

There is no doubt that the D3 computer equipment will suffer a sharp decline in reliability as it ages. It is essential that action is taken on the ETI and audit IT reports which both commented on the over reliance that is placed on the Director for technical backup. This technical aspect of the Director's role developed for historic reasons relating to staffing levels during the period of closure. Plans will need to be drawn up to secure the technical future of the Planetarium following the Director's retirement (March 2014).

Dr T R Mason  
Director  
10<sup>th</sup> March 2010

## Budget Armagh Planetarium 2010 – 11

	Budget 2010/11 £k	Projection 2009/2010 £k	Budget 2009/10 £k	Actual 2008/2009 £k
<b>Income</b>				
<b>DCAL Grants</b>				
Recurrent grant announced for the year	483.0	483.0	483.0	483.0
Additional Recurrent Grant	0.0	0.0	0.0	4.0
Capital equipment	25.0	20.4	25.0	67.0
Building refurbishment and equipment	0.0	0.0	0.0	0.0
Building refurbishment and equipment - from deferred income	0.0	0.0	0.0	0.0
Re-allocated Recurrent Grant to Observatory	0.0	0.0	0.0	-5.0
Prior year capital grant released	0.0	0.0	0.0	0.8
<b>Total DCAL grant</b>	<b>508.0</b>	<b>503.4</b>	<b>508.0</b>	<b>549.8</b>
<b>Other income</b>				
Restricted external income	0.0	23.9	0.0	8.0
Deferred Income	0.0	0.0	0.0	-4.0
Income from prior years matched with expenditure	0.0	0.0	0.0	0.0
Admissions	143.3	140.0	150.0	130.2
Outreach	10.0	11.0	14.0	11.8
Sales	75.0	75.0	65.0	58.8
Other income	10.0	4.0	6.7	14.0
<b>Total other income</b>	<b>238.3</b>	<b>253.9</b>	<b>235.7</b>	<b>218.8</b>
<b>Total income</b>	<b>746.3</b>	<b>757.3</b>	<b>743.7</b>	<b>768.6</b>
<b>Expenditure</b>				
<b>Direct education costs</b>				
Staff salaries	258.5	238.4	275.3	237.7
Change in pay scales from Feb.09 - AO,AA and analogous	0.0	0.3	0.0	0.0
Agency staff costs	8.0	11.0	0.0	0.0
Travel and subsistence	10.0	10.0	15.0	16.5
Irish Shows funded by external income	0.0	16.0	0.0	0.0
Show production	13.0	16.0	15.0	9.9
Exhibitions and events	10.0	10.0	30.0	29.9
Exhibition and events funded by external income	0.0	7.9	0.0	3.0
Advertising	31.0	22.0	35.9	41.8
Capital equipment funded from recurrent grant	0.0	0.0	0.0	0.0
Vehicle expenses	5.0	4.0	4.0	3.6
Equipment funded by capital grant	25.0	20.4	25.0	67.7
Library and subscriptions	7.0	6.0	6.0	5.7
Hospitality	1.0	0.5	1.0	0.6
Bank charges - admissions	2.0	1.5	0.5	1.9
Staff uniforms	2.0	1.0	1.0	0.8
	<b>372.5</b>	<b>365.0</b>	<b>408.7</b>	<b>419.1</b>
<b>Front desk and shop/mail order costs</b>				



Staff salaries	57.7	53.3	52.3	51.0
Change in pay scales from Feb.09 - AO,AA and analogous	0.0	5.8	0.0	0.0
Travel and subsistence	1.0	0.5	0.4	0.5
Exhibits and events	1.5	1.5	1.0	0.8
Postage	1.5	1.5	2.3	2.7
Advertising of products	2.0	1.0	2.0	2.5
Stationery	1.0	0.5	0.1	0.1
Shop and mail order purchases	48.0	51.0	41.0	40.6
Increase/decrease in bad debt provision	0.0	0.0	0.0	0.0
Bank charges - credit card processing	2.0	2.0	0.5	1.9
	114.7	117.1	99.6	100.1

### Buildings/grounds

Insurance	17.0	16.5	15.0	16.0
Heat and light	48.0	46.0	50.0	51.2
Property repairs	15.0	15.0	18.0	20.4
Professional fees Property Services	4.0	3.0	4.0	5.7
Cyclical buildings maintenance	7.0	5.0	8.0	0.0
Cleaning contract	21.0	17.5	14.0	13.9
Cleaning consumables	5.0	3.5	3.0	2.1
Equipment maintenance	30.0	58.0	22.0	39.9
Rates	0.5	0.2	0.5	0.0
	147.5	164.7	134.5	149.2

Budget 2010/11 £k	Projection 2009/2010 £k	Budget 2009/10 £k	Actual 2008/2009 £k
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### Administration

Staff salaries	59.4	58.4	58.1	56.6
Telephone	6.5	6.0	6.0	5.6
Postage	7.5	7.0	6.0	5.5
Staff recruitment	2.0	2.0	0.0	0.0
Stationery	12.5	12.0	14.0	15.4
Professional fees	3.0	3.0	0.0	0.0
Legal expenses	0.0	0.5	0.0	0.0
Training	3.0	4.0	4.0	0.9
General expenses	3.6	3.2	2.6	6.9
Equipment leasing	0.6	1.2	1.2	1.2
Office and café furnishings	2.0	1.7	1.0	0.5
Audit	9.0	9.0	8.0	6.4
Management Committee/Governors meetings	2.5	2.5	0.0	1.8
	111.6	110.5	100.9	100.8

### Total expenditure

	746.3	757.3	743.7	769.2
<b>Surplus/-deficit for the year before pension adj.</b>	0.0	0.0	0.0	-0.6

Budget 2010/11	Projection 2009/2010	Budget 2009/10	Actual 2008/2009
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### Financial KPI

Visitor numbers	43000	40500	42000	35700
Outreach numbers	10000	12000	15000	13500
TSN numbers included above	1000	1100	1000	500
Income from admissions - £k	143.3	140.0	150.0	130.2
Income from outreach - £k	10.0	11.0	14.0	11.8
Income from shop and mail order sales - £k	75.0	75.0	65.0	58.8
External income as a % of total income	31.9%	33.5%	31.7%	28.5%
Total cost per visitor/outreach - £	£14.1	£14.4	£13.0	£15.6



Administration costs as % of total costs	15.0%	14.6%	13.6%	13.1%
Absence - days	25	37	25	10.5
Absence - percentage	1.0%	1.5%	1.0%	0.4%
Total salaries - £k	375.6	356.2	385.7	345.3
Change in pay scales from Feb.09 - AO,AA and analogous	0.0	6.1	0.0	0.0

### **Key 2010/2011 budget assumptions**

#### **Income**

1. Admissions income continues to increase with the increase in planned visitor numbers.
2. Shop and mail order sales remain unchanged from the levels projected in 2009/2010.

#### **Expenditure**

3. Salaries and wages
  - full complement of staff restored
  - salary inflation 1.5% from 1 August 2010.
- employer pension contribution rate increased by 1% from 1 April 2010.
- AO and analogous grades at new NICS salary scales.

# Armagh Planetarium Draft Marketing Plan

## 2010 - 2011





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## 1.0 INTRODUCTION

Planetariums serve several roles within their communities including:

- Interpreters and popularisers of astronomy and space science
- Support and enhance the teaching of astronomy and related subjects within the formal education system
- Provide a community resource for reliable astronomical information
- Offer interdisciplinary or even artistic programming

Armagh Planetarium is a world-renowned astronomical educational establishment. Established in 1968 its purpose is to bring astronomy to a wider audience. It is a multifaceted organisation dedicated to astronomy education for all levels, from nursery through to retirement age. It is the Planetarium's unique ability to adapt to changing audience needs that have enabled it to stay at the forefront of science education since its formation.

Our aim is to demonstrate to our visitors the amazing objects that exist in the cosmos, but to do it in such a way that they do not see our efforts as formal teaching. We call this "Learning by Stealth". When they are prompted to ask questions, they are engaging in the learning process. This focus has led to our deliberate positioning of Armagh Planetarium as a place where impressionable young minds can be encouraged to make career choices in the sciences.

As the planetarium is a well known tourist attraction around the globe, we need to exploit this by advertising more widely which would attract not only local visitors but also overseas tourists. We must take advantage of Northern Ireland's new found ability to attract tourists once more.

### 1.1 Mission Statement

"To advance and promote the knowledge and understanding of astronomy and related sciences".

This is in support of DCAL's Departmental objective, "to protect, nurture, and grow our cultural capital for today and tomorrow".

## 2.0 CURRENT MARKET POSITION

### 2.1 Product

Armagh Planetarium offers a unique visitor experience with the aim to education people of all levels, from nursery through to retirement age. The theatre system is at the centre of the experience which offers a full-colour 3D experience projected over the entire dome. Armagh Planetarium is the only site in Ireland to boast this amazing technology.

Visitors can use interactive displays to learn about the cosmos and watch the latest space news in real time. The Armagh Celestial Cathedral is a beautiful gallery of illuminated deep



space images taken by the Hubble Space Telescope framed in dramatic gothic arches.

The Astropark is a scale model of the Universe where visitors can walk through the Solar System and into the Milky Way and beyond. This demonstrates how small our planet Earth is compared with some of its neighbouring worlds. The planets themselves are dwarfed by the great arch representing the limb of the Sun. Beyond the model planets is our Hyper-Cube, an exhibit demonstrating the principles used to fit the immensity of the Cosmos into a tiny part of Armagh.

Our activities support the needs of children of all age groups, and indeed of people of all ages to access information about science and astronomy in an easy and accessible way. Indeed all the age groups are welcome and we make an effort to ensure that we are inclusive for those with special needs, learning difficulties or any form of disability.

## **2.2 Place**

Armagh Planetarium is located in a purpose-built location within the city of Armagh. This location can host both the general public and also educational visits from schools and other groups. As well as this location, the Planetarium can also perform Outreach visits using a portable dome. This enables us to reach a large number of people who ordinarily may not be able to visit the Planetarium at Armagh from further a field. Large science festivals and science events are also supported by the Planetarium.

The Planetarium also acts as a repository of information, and we have an information address which receives a steady stream of requests for explanations of unusual sightings in the night sky, as well as explanations of what is the bright star which was obvious in the night/early morning sky.

The Planetarium's web presence at [www.armaghplanet.com](http://www.armaghplanet.com) provides information on the offerings available such as show times, special events etc. It also serves a purpose to educate those who wish to know more about our world. It contains a wealth of information in both text and video mediums from virtual tours and pictures to downloadable activity sheets.

## **2.3 Price**

The Planetarium operates a pricing strategy which provides value for money, competitively priced against competitors. At present the current price for a family is £20.00 which is discounted. A family constitutes of a maximum of two adults and three children. There is also a price structure for groups which consist of over 20 people and for school groups. An opportunity also exists to purchase season tickets.

## **2.4 Promotion**

Current/recent promotional activities:

- Leaflets placed on Irish Sea ferries
- Leaflets placed in local hotels
- Included in NITB "Visit NI" literature
- Included in "NI for Kids" literature
- Included in NITB "Blank Cheque" scheme

- Issuing 2 for 1 vouchers with reference codes for tracking the success
- Mail shots to targeted schools and groups
- Flexible approach to pricing i.e. to schools, community groups etc
- Outreach programme
- Planetarium website with online shop
- Subscribing to heritage Ireland annually
- Easter advertising in local newspapers
- Sponsorship of St. Patrick's Day float
- Partnership with Belfast Telegraph to provide 6-week Astronomy poster series
- Portable planetarium domes
- Conference and meeting facilities
- BBC radio facility on site
- Science festivals
- Teachers "Space camp" training
- Astronotes

### **3.0 MARKET OVERVIEW**

Armagh Planetarium's market is based upon school/group educational visits, individuals and family visits. The public have a lot of choice in terms of tourist venues. Competitors would include venues such as W5, Ulster museum, Ulster Folk Park and Navan Fort to name but a few. Working together with competitors will aid better communication channels and promotional opportunities. Key economic indicators for 2010 suggest that the current trend shows an increase in tourism within Ireland. This may be in part due to the recent recession with more people looking within their own country for activities and entertainment instead of holidays abroad. Thus this trend can be exploited to maximise visitor numbers, especially during the summer months.

Customer expectations are changing, people demand to be entertained with relevant and sometimes humorous illustrations. This is why the Planetarium operates the policy of "Learning by Stealth" where we can demonstrate to our visitors the amazing objects that exist in the cosmos, but to do it in such a way that they do not see our efforts as formal teaching.

It is important to keep the Planetarium on an upward trajectory. Given the world-wide recognition of the importance of making school children aware that careers in science, especially in astronomy and space science, are a viable and desirable career path, this aim is achievable. The current period of financial turmoil and instability will only accentuate this, as people realise that scientific careers provide a very mobile pathway to working globally.

### **4.0 SWOT ANALYSIS**

#### **4.1 Strengths and Weaknesses**

The product offering by the Planetarium is unique, nowhere else in Ireland offers this customer experience. Visitors are educated on the world they live in, they learn about the size and significance of our Earth and the other planets through an informative yet highly



entertaining series of presentations. These range from the ever-popular digital theatre, the only one of its kind in Ireland where images are viewed on the dome. Visitors can recline their seats back and imagine they are flying through space. The Planetarium also boasts a series of exhibitions areas as well as the Astropark which is located in the surrounding gardens. Visitors can also avail of the café facilities and can take a unique souvenir home from the on-site shop. The package offers value for money with a family ticket costing £20.00. This is very competitive when compared against other activities available to the public.

The theatre presentations can also take the form of live interactive shows which are presenter led, thus visitors can ask questions and are not simply having a “cinema-type” experience. This enables us to attract repeat visitors as we offer several different and new shows. One new show is called “Two small pieces of glass” and tells the story of Galileo and his discovery of the telescope. This show will be free as the Planetarium is a member of the International Planetarium Society (IPS). Another example of a new show will be coming from Leicester as we have been part of a multi-venue consortium funding and making of the show. Our new Mars show is a co-production between Evans and Sutherland-Spitz, GoTo, Armagh Planetarium and the European Space Agency. Our live “Pole Position” show changes with the seasons and is scripted, designed and programmed in-house by the Theatre Manager. Thus these shows are flexible and can be adapted and edited to suit the audience. Pole Position shows visitors the constellations and the sights in the night sky. Plans are also well underway to translate the theatre shows into the Irish language which will hit a niche in our market. This is being collaborated with the BBC and Armagh City and District Council.

The emphasis on live shows is also targeted towards our school audience where interaction with students is key. KS2 and KS3 theatre shows have been developed in-house and are presenter led where they ask questions and the audience responds. There is also an interactive quiz at the end to engage the students. A triangle of events has also been developed for the school visit programme. The triangle consists of the live theatre show, which is related to the teaching curriculum, followed by an activity such as a workshop e.g. rocket making and manufacture with a tour of the exhibits and a presentation on a key exhibit such as the nickel-iron meteorite on display which is the largest in Ireland.

We continue to include underprivileged and disadvantaged schools or other bodies in our work as possible, being conscious of the New Targeting Social Need programme (NTSN). Outreach work is strong in this area and we have continued to offer an evening adult education service in Belfast and Omagh. One of the courses is run with Queen’s University in Belfast, the other is run at the Tara Centre in Omagh.

Teacher training is also to the fore within the Planetarium and we have joined forces with the International Space School Education Trust (ISSET) to provide teacher training or “Space camps”. Teachers can come and learn more about space and also learn techniques and workshop activities to deliver to children.

Following the recommendations of the ETI report we have a new project with the teacher training colleges which is explained fully in the business plan. Likewise we have followed the ETI report’s suggestions and completely changed the activities that the schools will



experience during their visits. This will be cemented by the new video conference abilities which will allow us to provide pre and post visit support to our school customers.

The challenge is to maintain our visitor numbers and encourage repeat visits. We continually strive to update and upgrade equipment in a fast evolving area. A faster processor, more memory and greater pixel counts on the dome leads to better images to inspire the imagination. At present there is a trend where many visitors believe that the Planetarium is a one-off visit or essentially a place that only schools visit, and this mind-set we need to change. This can be preformed via targeted advertising on all available media formats i.e. television, radio, print and online.

As Armagh is not located close to the major airports or indeed Belfast, it does pose a problem in terms of logistics for tourists. Working together with companies such as Translink is key as they can offer day trips and excursions.

#### **4.2 Opportunities and Threats**

The opportunity to work with other tourism organisations and businesses can aid better communication links and also develop opportunities to increase visitor numbers. We have plans to work with the Mooney Group of Hotels, including the Armagh City Hotel to offer special deals with hotel visitors and the Planetarium. A similar approach to the Hastings Group is planned. We will provide leaflets and information on the Planetarium, and further exploit our existing contacts with other Armagh tourist venues. We have been collaborating with the NITB and Armagh's new tourism initiative for the past two years and have a good working relationship with the ACDC tourism staff. We are an important part of the Armagh Tourism project. Joint promotion is vital. This can also build up contacts which is important along with media contacts.

With the economic situation, there is a growing market for short breaks, especially within Northern Ireland due to the currency exchange rate of the Euro, thus this can be exploited. The main shopping area of Newry is particularly popular and Armagh is being targeted as a shopping destination also. Incising people to visit whilst on their shopping trip can boost visitor numbers. An example of using this opportunity is the recent uptake on Northern Ireland Tourist Board's "Blank Cheque" appeal which provides potential visitors with a money-off coupon.

The Internet is a domain which is vital to take advantage of. The Planetarium has an online presence in the form of [www.armaghplanet.com](http://www.armaghplanet.com) which provides a wealth on information and does receive a large number of hits. On the Google ranking system, the website received a 7 out of a possible 10.

Using effective marketing techniques we have the opportunity to collect visitor data and satisfaction figures using market research. Market research can show the organisation where people have come from to visit the attraction, the medium through which they heard about the Planetarium and what their impressions where. This is of particular use when directing promotional material at a specific market i.e. the overseas market.

There are threats in the form of competitors within the local area, however with a unique offering we can minimise these potential threats. Destinations outside of the locality can also provide visitors with choice, the main way to avoid a potential loss of visitors is to

improve awareness of the Planetarium. This can be achieved through the means of advertising.

There is also a trend that transport costs are rising and this can lead to a decrease in school groups attending the venue. To avoid this potential loss in numbers a strategic approach to outreach would need to be developed. If costs continue to rise and the schools conclude that the trip is beyond their means then outreach would be an option, if they cannot come to us- then we can go to them. A virtual video conference option is also an avenue which can be explored.

Armagh Planetarium staff need to work in accordance with the school curriculum and keep updated on any changes, as any deviation from the curriculum could reduce school visits. Our mission will be to make sure that every child understands that they have a role to play in our world. It is an achievement that Armagh Planetarium staff have participated in the return of space science topics to the NI curriculum, and have even wrote relevant parts of it.

Threats to the Planetarium would also be in the form of wear and tear. The exhibits and the theatre need to be well maintained to ensure that damage and neglect do not become an issue. The planetarium also needs to keep at the forefront of international advances in technology to retain our reputation for thoughtful innovation.

#### **4.3 Key Issues**

- Well trained staff who have the preparation and communication skills to deliver the product effectively
- The appropriate level of tools and materials for the staff to create and present the product
- The means to find out the needs and expectations of your audience
- An effective marketing and advertising plan
- A development effort that brings in additional public support through memberships, sponsorships, grants, and special events

In order to identify what the “desired product” even is, we must be able to:

- Identify the target audience
- Determine the desires and needs of community members and use that information to excite and engage them
- Conduct market research through focus groups, test screenings, polls and surveys
- Realise the need to occasionally “reinvent” ourselves when technology and methodology go out-of-date (and before attendance falls)
- Make the most of the available resources
- Achieve a high level of “popular programming” (compelling, valued, meaningful, desirable, professional, engaging, inspire repeat visitation)

## **5.0 STRATEGY**

Armagh Planetarium aims to advance and promote the knowledge and understanding of astronomy and related sciences throughout the Island of Ireland and abroad.

The principle aim of the marketing strategy is to successfully communicate the unique value and experience of the Planetarium to as wide a spectrum of audiences as possible, both at home and abroad. The marketing strategy will continue to identify the needs of the audiences, actual and potential, and communicate with them in the most effective and positive manner possible.

Audience development research will be carried out to establish the nature of potential additional audiences. In parallel with this, continuing efforts will be made to understand how the Planetarium can maintain and improve on the quality, integrity and distribution of their product/service within the financial resources available to it. The future success is dependent upon a challenging balance: the quality of the product/service, the quality of the audience experience in conjunction with identifying opportunities to expand activities and events where possible.

### **5.1 Target Markets**

The target areas for the marketing strategy are threefold. The first sector is the weekdays which mainly consist of school groups.

- Nursery
- KS2
- KS3
- Adult/Teacher

Providing a unique experience for the children can promote the Planetarium through word of mouth to other schools and also can lead to family visits at the weekend or school holidays. Teacher packs contain follow up material, activity sheets, and future events at the Planetarium.

The second sector is the weekends which consist of a combination of both adults and children. Individuals may come as well as families which the theatre caters for with a variety of shows available as well as a unique workshop.

The final sector is the tourists/holiday visitors. Providing a unique experience attracts people. Due to economic factors the trend seems to be that families are not travelling abroad but are seeking entertainment within the country.

### **5.2 Marketing Opportunities**

The first goal must be to reach as many children in the local school population as possible. This should be carried out at all ages and we firmly believe that getting our message across as early as possible is a worthy target. Thus we must aim to provide for every child in the primary school system to have the opportunity to hear from us either at the Planetarium or in their schools.

The techniques and tools available to market a visitor attraction are wide ranging.

### ***Press Advertising***

Local Press can be utilised to promote special events through advertisements. Local Press can also provide a means to get articles/photographs published such as reviews/write-ups on events.

### ***Advertising in Tourist Publications***

Tourist boards provide publications both in print and online which can be aimed at the target market.

### ***Radio and Television Advertising***

Television advertising can be effective, though it is expensive, it can reach a large audience quickly. Radio can raise awareness and, compared with television, it is relatively inexpensive. Negotiating can get the best deal. Many stations have community calendars which can be utilised free of charge to promote events.

### ***Mail Shots***

These are a great tool to use for specific market segments. They can be used with good effect with: schools, club and society organisers, accommodation providers, other operators. These can consist of news, special information etc.

### ***Leaflets***

Can be located in tourist information centres, accommodation places such as hotels, airports, bus centres etc.

### ***Websites***

Provide opportunity for detailed and up to date news of events. The website can be linked with other websites such as tourist boards.

## **5.3 Promotions**

### ***Special Events***

There are two types of event:

- Exhibitions aimed at the public, to draw those who may not otherwise visit or to attract back those who have been before.
- Event mainly at gaining media coverage to promote the attraction, such as a personality opening a new feature. Need to meet media deadlines, offer the press shots, provide well written and appealing press releases, and ensure media representatives present.

### ***Special Offers***

There are two main types of special offers:

- Initiated by the attraction to increase numbers at specific times, spread the load at

- peak times, and get feedback on an advertising campaign.
- Those organised by an outside agency e.g. tourist board.

### **Media Relations**

One of the most cost effective elements in marketing an attraction is the publicity gained by free media coverage. Relationships should be built up with news editors, feature editors, journalists, photographers and cameramen working for local media or freelance. They should be sent press releases on anything of interest.

### **5.4 Marketing Objectives**

- Increase visitor numbers
- Enhance customer loyalty
- Increase awareness of the Planetarium both locally and abroad
- Achieve a high level of customer satisfaction
- Attract more schools
- Promote outreach capabilities
- Increase shop revenue
- Promote special events within the Planetarium
- Enhance public relations

### **6.0 RESOURCE REQUIREMENTS AND BUDGETS**

The main objective for the year commencing 2010 is to increase visitor numbers. To achieve this aim we need to continue our product offering and promote our unique selling point, which is that the Armagh Planetarium is the only such venue in Ireland with the Digistar 3 system to provide a unique and entertaining, whilst, also providing an educational experience.

We will focus on marketing and promotional activities to boost the profile of the Planetarium by:

- Assessing the effectiveness and the distribution of the leaflets placed on Irish Sea ferries, airports and other tourist “hot spots” and retaining the services of the distribution company
- Continue to liaise with the NITB in terms of being involved with their promotional activities making links and networking with them
- Working closely with “NI for Kids” using their website to effectively market unique shows aimed at children or special events
- Included in NITB “Blank Cheque” coupon scheme
- Issuing 2 for 1 vouchers with reference codes for tracking their success/ popularity
- Sending out mail shots to targeted schools and groups- inform them of upcoming events and any developments within the Planetarium
- Promoting the benefits of the Outreach programme, especially with the rise in transport costs for schools they may benefit from the Planetarium coming to them in one of our portable domes
- Subscribing to heritage Ireland annually which provides an online booking service and networking benefits
- Easter advertising in local newspapers

- Using local papers to advertise events where they are invited to take photographs of the audiences and use the press releases
- Sponsorship of St. Patrick's Day float
- Partnership with a local newspaper to take a series of "night sky" productions
- Attend and network at science festivals which will attract people from other parts of Ireland
- Promotion of the facility to provide Teachers "Space camp" training where they can learn more about how to teach space topics and learn invaluable techniques of workshops
- Build a list of newspaper and radio contacts to provide press releases to and details of upcoming events
- To coincide with the website have a social networking entity such as Twitter or Facebook where information on events can be communicated and general discussion can take place on all things space and join up with other Planetariums and space institutes to share knowledge and understanding
- Utilise the feedback forms to assess the customer experience and use these to find niches for targeted marketing
- Draw up a list of email contacts using the provided feedback forms where email addresses have been provided, this can be used to send details of upcoming events or other unique pieces of information which they would be interested in and it keeps the brand of the Armagh Planetarium to the fore.
- Work with emerging media projects in collaboration with Discover Science and Engineering, Irish government's science promotion agency.

## **7.0 IMPLEMENTATION**

The purpose of the Armagh Planetarium marketing plan is to serve as a guide in our journey to continue and improve the organisation and its ability to serve its audience both at home and abroad. The marketing plan is a key element of the overall Business Plan. We will track the planned marketing activity and evaluate. If necessary, the marketing objectives can be revised if we find they are not accomplishing the intended goal.

Sinead McNicholl  
Tom Mason  
February 5<sup>th</sup> 2010  
Modified March 10<sup>th</sup> 2010