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"Architecture from the Inside Out" (Developing Successful Environments to Promote Creativity

Parallel Session 3
Exploring the new horizons of STPs

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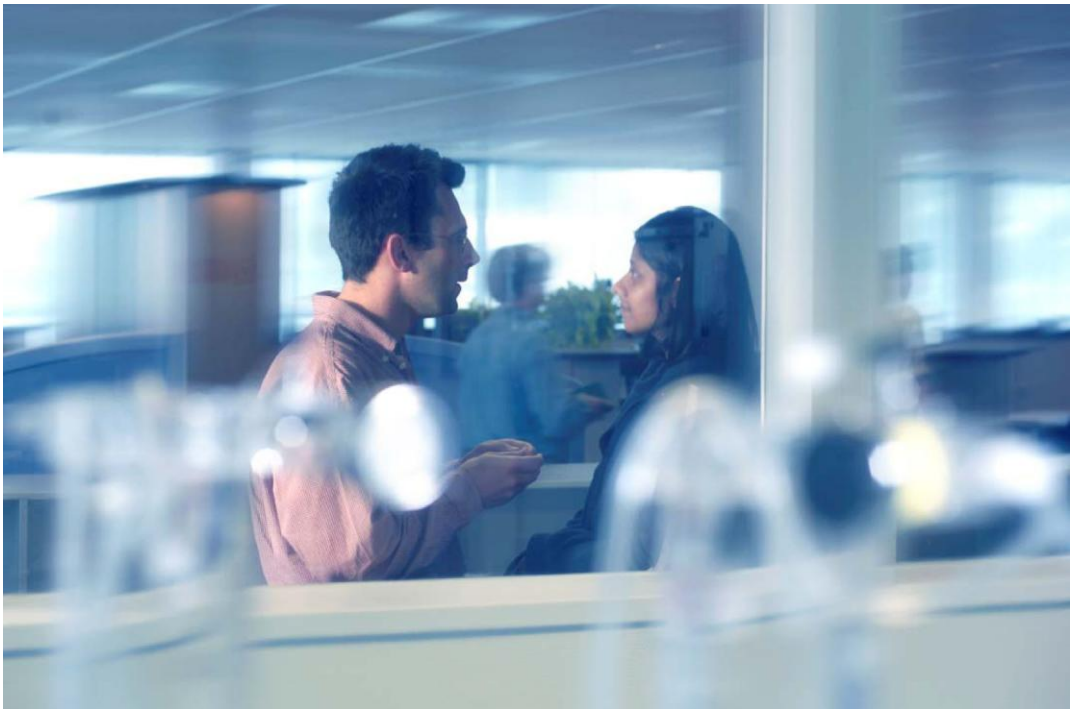
"Architecture from the Inside Out" (Developing Successful Environments to Promote Creativity)

1.0 Executive Summary



Caption: "People innovate, not buildings."

It is widely recognised that the physical working environment - the actual place people work - is a major contributor or inhibitor to innovation and optimised business performance.

Given that the cost of the scientists and engineers who occupy science buildings is 85 per cent of the total people / facilities expenditure, the need to design buildings which enable them to be effective and efficient with their time is now critical to the design of Science Park buildings.

By starting the design process with the people and the way they need to work- even if in some cases the process has to be theoretical- it is true to say that the building layout and its design will be fundamentally different from conventional building design.

As the shortage of science skills and the costs of scientists increase, tenant organisations and customers will demand space which not only looks good and is green but space which enables their people to work effectively and be efficient with their time.

This Paper explains the process by which this can be undertaken and the results which can be achieved with the right buildings and working environments.

2.0 The Proposition

It is widely recognised that the physical working environment- the actual place where people work- is a major contributor to innovation and optimised business performance.

This is not just a European phenomenon.

Strong evidence exists across the world which proves that poor working environments de motivate people, sap energy, restrict ideas flow, waste time and seriously put the brakes on creativity.

Equally there are examples where the right design releases the energies and creativity of knowledge workers and accelerates the innovation processes.

> ***"Our building was designed to help our project teams develop drugs more quickly – we have just achieved the fastest ever drug development and we are convinced the building played a big part"***
> ***Steve Ashton – AstraZeneca***

> ***"We have designed our building to 'face' our customers and they love working in it with us – we have doubled the size of our business in the last 4 years and believe the building played a major part in this"***
> ***Ron Biagioni – 3M UK***

Why is this relevant to Science and Technology Parks Owners?

In the short term, one could argue, not a lot, but if they align themselves with the long term fortunes of their Tenants and Customers it must add to the Science Park's reputation which in turn must attract new Tenants and underpin real estate value. The idea of continuous strong Tenant and Customer demand, even in poor market conditions, must be appealing.

The problem is that most construction professionals see the buildings they design and construct simply as end products- even if in most cases they claim otherwise. The reality is in most cases when the Tenant moves in the architect's and the builder's job is over. For the Science Park Owner and the Tenant the relationship is just at the beginning.

Aligning the interests of Tenant/ Customer and Park Owner calls for an alternative and new approach to designing buildings which really do help foster innovation, allow people to be effective and efficient with their time and allow their Organisations to flourish and grow.

3.0 Today's Drivers

Over recent years three relevant things have happened which support an alternative approach.

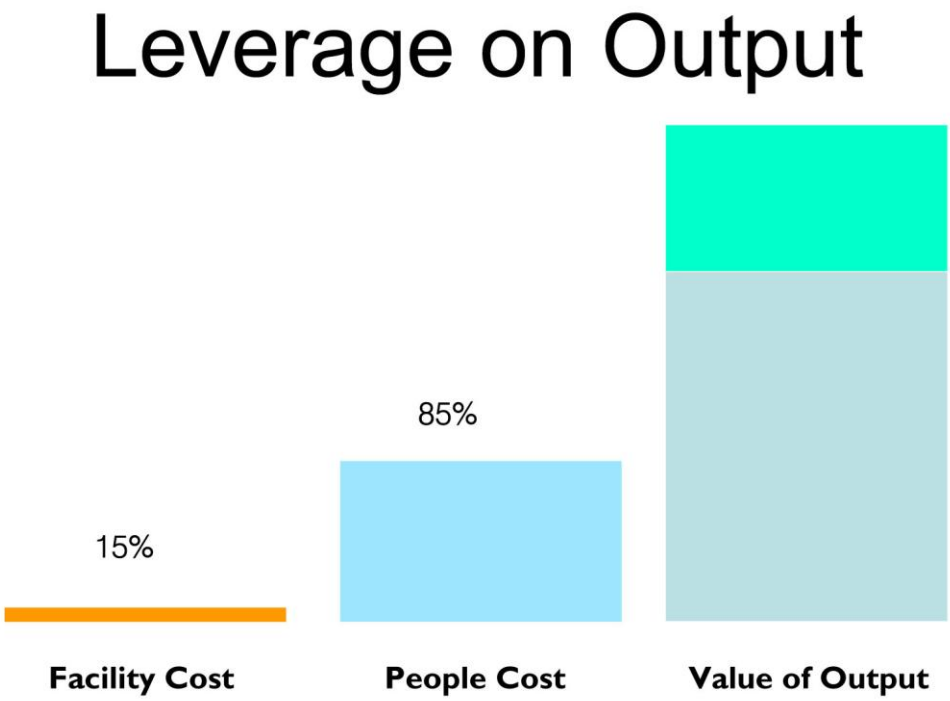
- In the knowledge economy the cost of people relative to buildings has become expensive – at least eight times more expensive than the buildings they occupy. According to a recent joint report by the Commission for Architecture and the Built Environment in the

UK and the British Council of Offices occupants' salaries make up 85 per cent of the combined cost of people and their facilities.
To salaries one needs to add social security and pension contributions.

The use of people's time is, therefore, an important factor and that means buildings designed to allow them to effective and efficient with their time.

- There is now considerable qualitative research available, largely by environmental psychologists in the United States, confirming the massive influence the physical environment has upon the way people behave and perform. Again in the knowledge economy the behaviour and attitudes of the people responsible for innovation are critical to success.

- We live in a digital age. The graduates leaving University today are the first fully digital generation. Their values are more entrepreneurial, independent, informal and environmentally aware than previous generations. Some would argue that bricks and mortar are now secondary to digital architecture. Those concerned with designing and constructing buildings rarely recognise this.



Caption: "Whilst the facility cost is comparatively small it has huge leverage potential on output"

4.0 Designing from the Inside Out

The key to the design of buildings and working environments is to start with the inside and work outwards. We call this approach **"Architecture from the Inside Out".**

It sounds common sense and people talk a lot about it but it rarely happens?

Starting with the inside means starting with the people who are going to occupy the building – their attitudes, behaviours, cultures and innovation processes-

Caption: "Architecture from the Inside Out- starting with the people. Shell's new Learning Center, Rijswijke, The Netherlands"

If no occupiers exist the process has to be theoretical but the process cannot be ignored.

This way buildings become powerful tools to encourage and facilitate innovation and performance rather than being perceived as expensive fixed overheads

Buildings and workplaces designed on this basis will release the energies of people, encourage the cross fertilisation of ideas and streamline innovation processes. Companies become more successful. They grow and attract others. The result is they become and are seen as creative hubs. Science organisations believe they need to be there. It would be wrong to say it is all down to the buildings but it is an important factor.

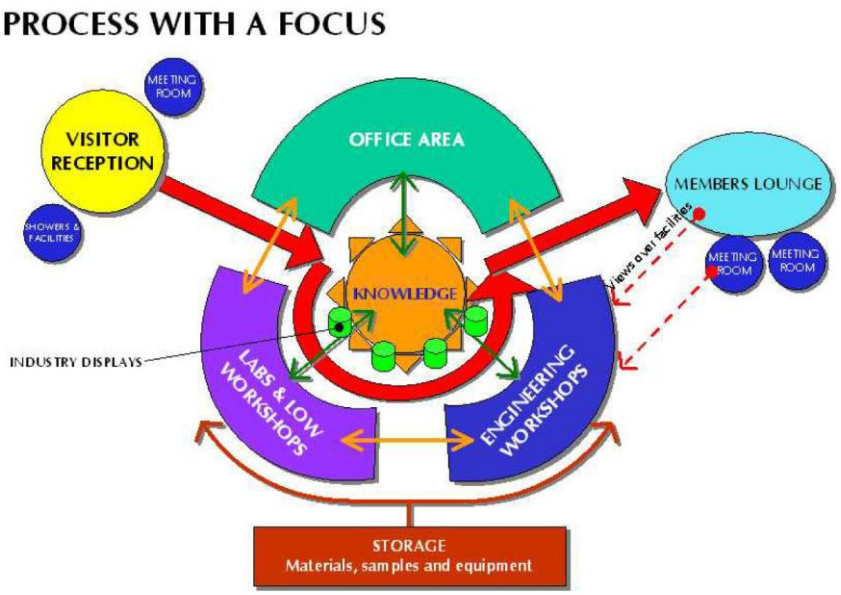
By starting with the people – the major cost to organisations – and not the buildings, the building layout and design will be fundamentally different.

The point is that if Science and Technology Parks are to attract the very best creative and innovative talents, classy external building elevations and entrance halls are not going to be enough and indeed are largely a waste of money. It will be how the internal spaces work for the people, their organisations and their visitors which will count at the end of the day.

5.0 Case Studies

5.1 TWI

When TWI, the Research Institute, decided to build a new 10,000m^2 Innovation Centre on Granta Park, Cambridge, UK, they did not start with the building design. They looked first at the people- what they did, how they did it and importantly how they wanted to do it. That journey determined what they built.



Caption: " Diagram to show the accommodation and its relationships which would enable TWI people to work the way they needed. This diagram became the blueprint of TWI's new Technology Centre outside Cambridge, UK."

Since the new Innovation Centre opened five years ago and partly as a result of this process, TWI has doubled in size and has attracted other talented innovation companies to Granta Park.

TWI's aim was twofold:

- To take 250 scientists and engineers out of their departmental silos (welding, composites, electronics, structural assessment etc) and put them together in a single building in a way that would encourage integration and greater communication without compromising technical capability, client confidentiality and importantly staff morale .

- To create a shop window to promote TWI's full range of Innovations and Services to an increasing number of organisations outsourcing their Technology.

It was a courageous leap of faith at the time.

Four years later TWI is well on its way to doubling its turnover and extending its reach both globally to South East Asia, the Middle East and South America and regionally with a number of new facilities across the UK.

Critically TWI host over 10,000 visitors a year so a key part of the business definition is proactive business development. This in turn has influenced the design of the Centre putting a business development zone at the heart of Centre.

According to Colin Walters, TWI's manager of the project ***"It is true to say that in no small way the new Innovation Centre has helped us achieve the following:***

- *Enabled technologists across different disciplines to solve problems together. The result is the best TWI can do, not the best one department can do.*
- *Accelerated the whole Innovation process by encouraging informal, spontaneous contact and placing less reliance upon formal meetings.*
- *Introduced a new culture of pride and confidence leading to greater openness and cooperation.*
- *Enabled visitors and prospective clients to see all that TWI has to offer in one place. Previously "I didn't know you did that" was a common response.*
- *Helped recruit the best people in a competitive market.*

This is the power of designing from **"the Inside Out".**

They are not alone.

5.2 DSM

DSM is one of the global leaders in nutritional and pharma ingredients. It is a fast moving, highly innovative company which has successfully reinvented itself from its traditional routes of mining and chemicals.

When it built a new 400m2 Food Innovation Centre in Delft, in the Netherlands it too started with the people, not the building.

As a result the new Centre brings together 100 people from R&D, sensory analysis, sales and business development.

According to DSM the new Centre:

- *Fosters greater creativity and innovation.*
- *Boosts creativity in food ingredient design*

- *Accelerates new product development*
- *Increased number of projects successful at feasibility stage.*
- *Speeds up the time it takes for new products to reach the market.*
- *Enabled recruitment of top class people.*

DSM believe that 30% growth targets over 5 years are conservative.

They are the first to acknowledge that this is not simply the result of a new building but the way the building was designed.

It was designed to encourage openness and the cross flow of ideas. Scientists are not only in spontaneous contact with their colleagues but constantly aware of what's happening in their laboratories too.

The place is set up for spontaneous, dynamic and flexible working allowing people to work where they want and with whom they want.

With complete security customers can be brought into the innovation process too and participate in product development in laboratories designed for that purpose.

The envelope of the building came about as a result of what happens inside as well as the site itself.

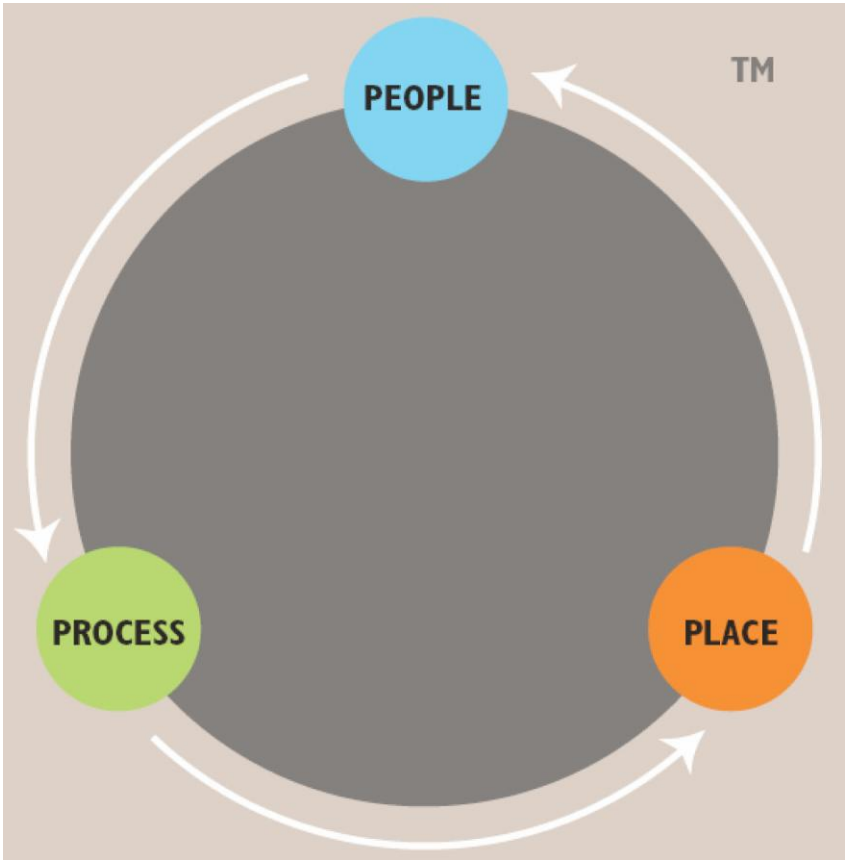
According to the director of the Centre at the time, Dr Niek Persoon:

"You sense what's going on. As soon as you see an opportunity you go for it"

Again this is the power of designing from **"the Inside Out".**

Caption: "The Food Innovation Centre for DSM is designed to encourage openness and the cross flow of ideas."

6.0 The Success Factors



Caption: "Design becomes a reiterative process starting with the people, then their processes and only then their workplace and building."

As with TWI and DSM the secret is not to start with the building but the occupants - the people.

But what do you do when there is no occupier and the building is being built on spec?

Manchester Science Park is determined to provide buildings which in the words of their Chief Executive, Jane *Davies "make a positive contribution to the success of its occupants and to the enjoyment of their work"*

msp has prepared a comprehensive Design Brief for this situation.

Although there are specific factors which apply to individual Science Parks across the world factors in common are these:

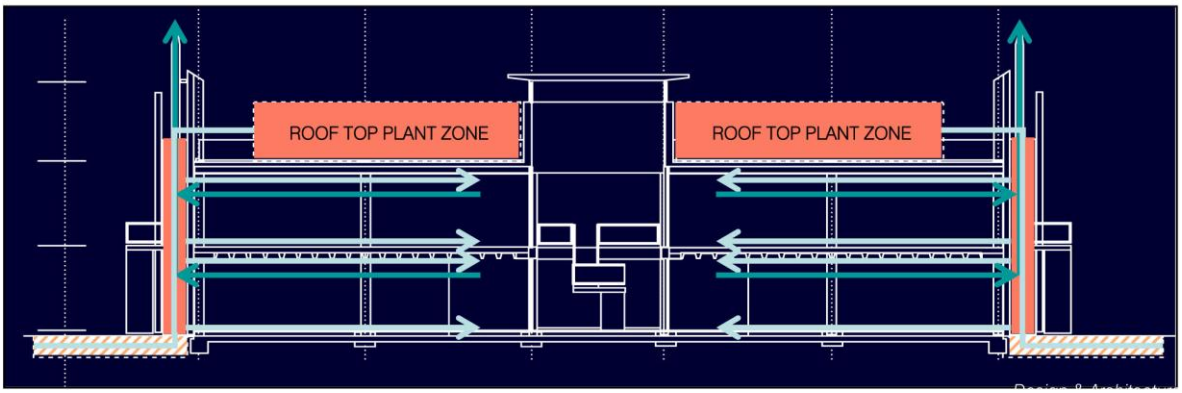
- A generous, central and flexible communal hub area for informal gatherings and random get togethers.

- Subsiduary semi private hubs around the building for individuals to take time out with each other.

- Touch down space for visitors.
- Resource centre for journals, internet, printing etc.
- Coffee / vending
- Flexible meeting / conference rooms
- Plenty of displays about tenants' work, white boards and message boards promoting a constant dialogue.
- As much transparency as confidentiality will allow.

Caption: "Transparency wherever possible is a vital factor in successful technology buildings as in this one for BP."

- Flexibility of spaces so they can be easily changed to suit changing needs.



Caption: "The 10 minute $10 move- everything here in one of BP's technology centres is flexible. The service installations are designed to allow it so."

- An Information and Communications Infrastructure which supports people mobility.

What's important is that these areas must merge and flow into each other. Design is critical to the success of these areas and failed examples are only too common. The best of international hotel design is a good benchmark. Hotels have a knack of making these areas pay too.

7.0 Criteria for Success

Caption: "Quantifiable results are not easy to measure but in this new Johnson & Johnson Research Centre they claim business has already increased by 30 per cent."

The connection between the building design and its contribution to innovation is not easy to measure. However based upon 20 years' experience of Workplace Design Projects it has been possible to devise a set of performance metrics which will help Science Parks diagnose quickly and easily to what extent their buildings are encouraging or hindering tenant interaction and networking.

These performance metrics were tested at a recent EIRMA Meeting in Paris of 50 R&D directors and senior managers:

- 10% of them were delighted to know that they had Workplaces which enhanced their performance.
- 53 per cent were relieved to know their facilities were neutral.
- 27% were concerned that they had a number of handicaps which would slow down their innovation processes.
- A final 10% were disappointed to know their Workplaces were a serious hindrance to their Innovation process and optimisation of their people.

The same performance metrics can be used as a format for designing Science Park buildings to optimise the innovation processes of their tenants.

8.0 Conclusion

Science Parks have much to gain from following this approach.

Those that do take this approach, as TWI have done, create Centres of Excellence or Innovation Hubs which command the highest real estate values in the long term. A reputation for successful innovation will always attract the strongest covenants.