



Editor
Dr. Farrukh Arif

Newsletter of NED University VR Center

Issue 2
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About VRC

The NED University of Engineering and Technology, Karachi has established a state-of-the art facility for integrating virtual reality in the education, research and practice. The facility that is housed at the Department of Civil Engineering is named as "NED University Virtual Reality Center" is the first of its kind in the entire region (sub-continent). The facility houses four major systems including, virtual teaming system, walking VR systems, Projection VR system and Passive 3D screen system. The major objectives of VR Center are to gear up the performance, by being a capacity builder, solution provider and knowledge innovation hub.

Facilities

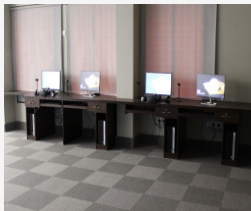
Projection VR System

The projection VR system is based on a Corner Cave-in concept that has the capability (both from software and hardware perspective) to provide a virtual-cum-immersive experience to a group of people.



Walking VR System

There are multiple walking VR systems available at the center to provide virtual immersive environment to the user specifically for VR designing, and VR based individual training, as per customized needs of the trainee.



Virtual Teaming System

The virtual teaming system is equipped with latest interactive panel, video conferencing and webcasting equipment and software.



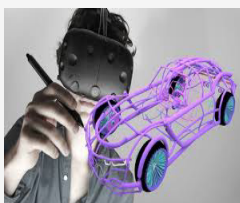
Passive 3D Screen

A passive 3D Screen that doesn't require any gadgets by the user has also been installed at NED VR Center. VR center is working on utilizing it for engineering, technology and science related visualization.



Design and Modeling Software

The center is equipped with VR designing and development software, Building Information Modeling platforms, 3D to VR transformation platforms, and VR experience software platforms etc.



Events & Activities

AutoDesk Futures' Forum Pakistan, May 02, 2019

Dr. Farrukh Arif, Director VR Center was invited as speaker at the inaugural AutoDesk Futures' Forum Pakistan, held on May 02, 2019 at Marriott Hotel Karachi. The topic of his presentation was "BIM for Virtual Reality and Progress Monitoring".



In his presentation, Dr. Farrukh Arif showcased various projects completed at the VR center, including the Survey-Cloud-BIM interaction based construction progress monitoring system, integrated immersive visualization for infrastructure management, smart progress monitoring system using remote photography and videography etc. The audience took keen interest in his presentation and also asked several interesting questions. Dr. Farrukh Arif also discussed the facilities available at the VR Center and invited industry to work in collaboration for mutual benefit.

NED VR Center Showcase Booth at AutoDesk Futures' Forum Pakistan, May 02, 2019

The NED University Virtual Reality Center set up a "Showcase Booth" at the Autodesk Futures' Forum on May 02, 2019 at the Marriott Hotel Karachi.



Team of Virtual Reality Center explained and exhibited the in house developed models to the visitors. More than 100 visitors experienced the models in immersive visualization through Walking VR systems.

Internships under "Vimagineering" Program

The NED University VR Center started offering internships to students of different universities under its "Vimagineering" Program. The Vimagineering Program (Virtual Imagination in Engineering) is envisioned top but intern-cum-apprenticeship program where internees are required to work on an assigned pilot project in the area of engineering, science and technology in 4 weeks' time.



The students are provided with enabling environment including hardware, software and continuous innovative guidance to accomplish project goals. The students are also required to write detailed report on the project. At the start of the program six internees were enrolled from different universities (PAK KIET, NUST-FAST, NED University) from Mechatronics, Computer Science, Information Technology and Applied Physics programs. The internees worked on projects like developing drone simulator, flight simulator and tutorial for lunar position impacts on high tide etc.

Development of Sustainable Towns in Virtual Reality

Students of BE Civil (Specialization in Construction) developed VR models of "hypothetical sustainable towns in Karachi" in Virtual Reality as a part of their course work at the VR Center.



The students performed asset modeling in different software and applied the concepts of sustainable built environment. The course seminar for presentation of their model was held at the VR Center at the end of semester where students showcased their projects to different faculty members.

Acknowledgement of DMedia Pakistan for Gift of 3D Screens

Mr. Malik Shahid Ahmed Khan, CEO, DMedia Pakistan visited NED University VR Center alongside the honorable Vice Chancellor Dr. Sarosh H. Lodi on May 9, 2019. He experienced various models developed at the VR Center and discussed ideas of mutual interest.

Mr. Malik Shahid Ahmed Khan appreciated the efforts of the NED University and specially VR Center. Impressed with the efforts, he gifted Passive 3D Screens on behalf of his Company. The Honorable Vice Chancellor Dr. Sarosh H. Lodi and, Director VR Center thanked him for his generous gift and appreciated his interest in facilitating research and education.

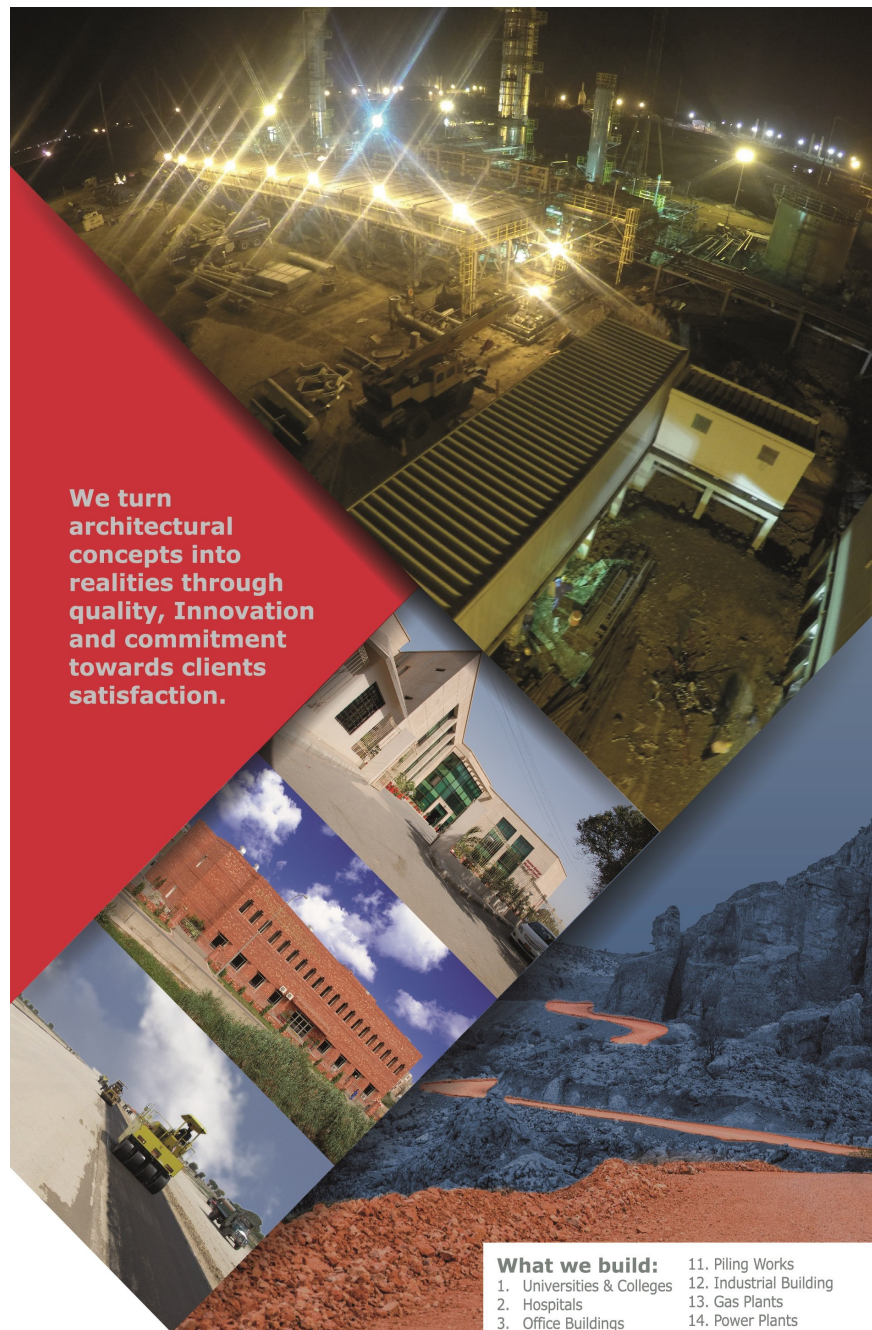
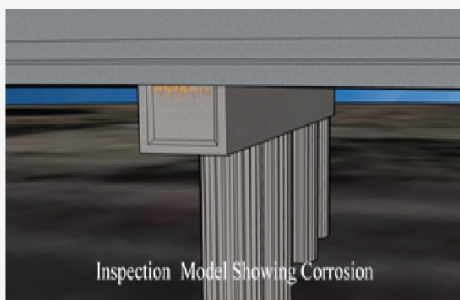
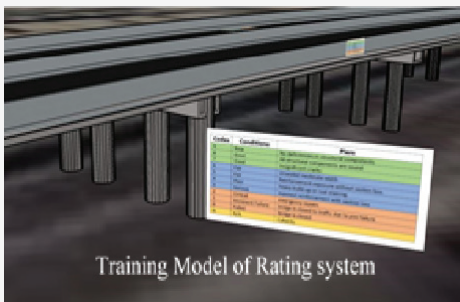


Project Showcase

Utilizing Immersive Visualization For Infrastructure Management Decision-Making and Technical Capacity Building.

Decision making is one of the major challenges one must deal with in infrastructure management. Decision-making requires proper capacity building of the personal involved in acquiring data for such decision-making. Many of the traditional in-class methods of capacity building lack rigor as those lack proper visualization for mega infrastructure. Modern tool usage such as immersive visualization can greatly facilitate in such capacity building. Immersive Visualization improves the effectiveness and communication in decision making regarding infrastructure management. This study aimed at using immersive visualization for efficient infrastructure management decision making through related and technical capacity building. First, 3D was created for one of the bridges (Gulshan e Iqbal Flyover at NIPA) in Karachi. 3D bridge model was converted into the compatible VR Format for Projection VR system. Model scaling and coding was done to produce interactive model. The main idea was to develop a bridge inspection learning module then use it for capacity building of engineering students. Therefore, Test sessions were carried out on a group of 69 Civil Engineering students.

There were two modules of test session, (1) the rating system explanation, and (2) Hypothetical bridge inspection. The results of test sessions assessment by the students through rubrics illustrated the students can develop a more in depth understanding of the different bridge components and inspection rating. Majority of the test subjects felt very easy to moderately easy in understanding of the information through use of VR, while majority found the immersive visualization helpful to concentrate on learning. Typically, the subjects felt comfortable while using Projection VR.



- What we build:**
1. Universities & Colleges
 2. Hospitals
 3. Office Buildings
 4. Residential Buildings
 5. Roads
 6. Infrastructure Works
 7. Air Strips
 8. Flow Lines
 9. Inlet Manifold Works
 10. Blasting works
 11. Piling Works
 12. Industrial Building
 13. Gas Plants
 14. Power Plants
 15. Porta Cabins
 16. Pre-Fabricated Building
 17. Sheds
 18. Ware Houses
 19. Bridges
 20. Plant Shutdowns

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Visitors' Gallery



Shah-Jahangir Manager NIC
Karachi Visited VRC



Junaid Hamid Director & CEO
from Costveyors with his team



Delegation from the University of Waterloo



Managing Director of 10Pearls Pakistan



Dr. Narmeen Head of Department of
Computer Science from Jinnah
University of Women
experience the state of the art facility.

What's Happening in VR World?

VR gets Real With Trades Training

Researchers are using VR technology to train people for work. Virtual reality (VR) is seen as the key to accelerating recruitment and training in a bid to plug the gap in different industries. Joy Business Academy (JBA) chief executive and founder James Coddington says that "It is also an important tool to engage those who may have great screen or game literacy but poor traditional literacy or numeracy." See more of this story at the source link.



(Source: https://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=12258848) vv

Virtual Reality to Improve the Lives of Senior Citizens

Virtual reality is emerging as a useful tool to bring about positive change for many, including the elderly. A company named MyndVR is on a mission to improve the lives of senior residents and assisted living communities by introducing virtual reality solutions into outdated health-care practices. The company is implementing this technology into 55+ living communities in order for seniors to experience the health benefits VR provides. This includes helping seniors cope with cognitive ailments such as Alzheimer's and dementia, create meaningful experiences without leaving the comfort and safety of a living center, and importantly, provide a bit of fun. See more of this story at the source link.



(Source: <https://www.forbes.com/sites/solrogers/2019/08/21/five-companies-using-virtual-reality-to-improve-the-lives-of-senior-citizens/#124e7ba42794>)

In-Going Projects

- Implementation of immersive visualization for cost planning during detailed engineering phase.
- Development of virtual reality application for road traffic crash simulation.
- Gesture Controlled Humanoid Robot with virtual reality visualization.
- Smart Construction Progress monitoring through videography processing interface.
- Development of Drone Simulator for Drone Pilot Training.
- Development of Flight Simulator.
- Tutorial for lunar position impacts on high tide etc.
- VR model of sustainable Town.





AUTODESK
Authorized Training Center
Authorized Certification Center



AUTODESK
Authorized Academic Partner



Revit

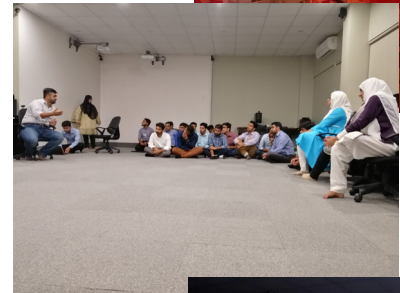
BIM
(Building Information Modelling)

- ✓ Learn Revit® features for BIM, the intelligent model-based process to plan, design, construct, and manage buildings & infrastructure.
- ✓ Revit supports a multidiscipline collaborative design process.
- ✓ Efficiently and accurately capture design intent in 3D
- ✓ Collaborate and coordinate across multidisciplinary teams
- ✓ Use Revit to analyze, simulate, and connect in the cloud to improve designs

- ✓ Comprehensive Course Content
- ✓ Goal Oriented Training
- ✓ Short and Intensive with Better Focus
- ✓ Flexible Time Frame

- ✓ Worldwide Certification
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ur Programs

NED University VR Center is currently running two learning and skill development programs for students. One of the program "Experience VR" is a STEM program specifically designed for school students to make them experience VR innovations through different immersive visualizations.

The second is an apprenticeship program "Vimageering" for university students in which students work on a project for 4-5 weeks internship to utilize their "Virtual Imagination for Engineering." Both the programs are customized for students and are being run continuously.



NED University Virtual Reality Center
STEM Program

EXPERIENCE VIRTUAL REALITY

ABOUT VIRTUAL REALITY

Virtual reality is a computer-generated environment that presents the user a three-dimensional perspective view of a scene or environment. It is a simulated experience that can be similar to or completely different from the real world. It is a computer-generated environment that presents the user a three-dimensional perspective view of a scene or environment. It is a simulated experience that can be similar to or completely different from the real world.

NED UNIVERSITY VIRTUAL REALITY CENTER

The NED University of Engineering & Technology, Karachi has established the state-of-the-art facility for integrating VR in the education, research and practice. The facility consists of state-of-the-art VR equipment and software. The center is equipped with the latest VR equipment and software. The center is equipped with the latest VR equipment and software.

PROGRAM HIGHLIGHTS

- Experience VR experience space various fields (VR Virtual Reality)
- Experience VR experience (virtual construction site visit, 3D modelling)

GIVEAWAYS

- Certificate of participation to school
- "I used NED VR" Decal to school

REGISTRATION

A 3-5 day session can be organized for a class group of 20 students. Charges \$50000 per school. Program shall be made through pay order/cheque in the name of "Chairman, Department of Civil Engineering"

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NED University Virtual Reality Center
Engineering Apprenticeship Program

Vimageering

Virtual Imagination for Engineering

Apprenticeship Benefits

- Experience the state-of-the-art technology and share experiences in a unique and novel way.
- Engage in an interdisciplinary, cross-university experience.
- Get introduced to variety of skill and tool and imagine, plan, and execute ambitious projects aimed at real-world problems.
- Secure exclusive VR Center Internship Certificate and enhance your profile

Program Details

Guidelines: Each participant will be assigned to a mentor by VR Center.

Timeline: Variable timeline for each participant based on convenience

Workload: Minimum of 5-6 hours daily.

Steps of Work: Based on Project assigned by the Assigned Mentor.

Submit Applications at:

vrcenter@neduet.edu.pk

Program Eligibility

Eligibility: Any University's Undergraduate Students in Second, Third or Final Year of Studies

Knowledge Background: Fundamental Skills and concepts VR and 3D modeling software.

Selection Criteria: VRC reserves the right for selection based on student's basic skills and dedication.

For Further Details Contact:

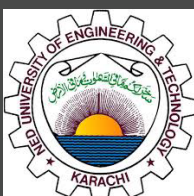
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