

Mr. Vicente González Pachón, as the Building Department Director of the company TÉCNICA Y PROYECTOS S.A. (TYP SA)

CERTIFIES,

That Javier Hernández Guadalupe (ID number 78550780-F) has undertaken a Professional Internship as an **Architect in the Building Department** of this company for a period of 12 months in a full-time capacity (February 2014 – February 2015). During this time, he has collaborated in the development of the projects listed below, successfully achieving the set objectives.

Projects and tasks developed:

Detail design of the **Bus Rapid Transport of the City of Astana (Astana, Kazajstan)** – Total Length: 22,7km; 20 air-conditioned stations.

- **Urbanistic Integration.** Developed various options for each station to correctly place the projects on the different locations.
- **Station Prototypes Design.** Developed various preliminary designs optimizing construction costs.
- **Singular Stations:**
  - **EXPO-2017 Station.** Design of the underground pedestrian access to Mega - Shopping Centre. Architect responsible for the delivery of the project. Carried out the final design and monitored the delivery of the project managing the tasks given to my team.
  - **Abu Dabi Plaza Station.** Edition tasks.
- **Depot:**
  - **Petrol Station** (4.008,3 m<sup>2</sup>) Architect responsible for the delivery of the project. Carried out the final design and monitored the delivery of the project managing the tasks given to my team.
- **Document control;** Edition tasks, checked codification of the documents to deliver, verifying the compliance with the quality criteria.

He took part in the team which developed the Detail Design of the Riyadh Metro Project (Package 3, Saudi Arabia), in the Design Joint Venture of the FAST Consortium, led by FCC. Detail design of the **Riyadh Metro Project**, Line 5 (Riyadh, Saudi Arabia). Total length: 13km; 11 underground stations; 1 depot.

- **BIM modeling:** He took active part in the design of the different buildings using parametric modeling tools. Solved day-to-day architectonic problems and modeled the project according to both TYP SA's and ATKIN's CAD and BIM standards. Solved the team's doubts related with Revit Architecture. Continuous use of Revit Worksets for collaborative modeling in real-time and partition techniques of the project to optimize
- **Urbanistic Integration.** Modelling of urban locations. Integration of buildings and urban elements. Edition of the geodesic coordinates of the different projects (Project Base Point, Survey Point, Origin). Responsible of coordinating, between the involved departments, the placement of the different buildings and urban elements in the street Building Department, Structures, MEP and Highways Department.

- **Stations** (11 stations of three underground floors, 9.700 m<sup>2</sup> constructed surface area) Collective design and modeling of the different stations using BIM cooperative worksets.
- **Collaboration** with MEP and Structures Departments to solve design conflicts (Clash Detection). Developed the projects using LOD 300 BIM standard (Level of Development). Implementation of efficient BIM workflows between departments.

Preliminary design of the **Panama Metro Project, Line 2 (Panama)** – 16 elevated stations of 3.508,23-5.161,33 m<sup>2</sup>.

- **BIM modelling;** Verifying the compliance with the design criteria.
- **Document control;** Edition tasks, checked codification of the documents to deliver, verifying the compliance with the quality criteria.

In witness thereof, the undersigned has signed this certification the 16<sup>th</sup> of February 2015.

  
D.º: VICENTE GONZÁLEZ PACHÓN  
DIRECTOR DEL DEPARTAMENTO DE EDIFICIOS

