We discuss the application of Zernike Phase Contrast Transmission Electron Microscopy (ZPC-TEM) to acquisition of image data for single particle analysis. The ZPC-TEM utilizes a Zernike phase plate which consists of a thin film with a small hole in the center. It is positioned at the back-focus plane of the objective lens introducing a half-pi phase shift to the scattered electrons leaving the central beam of unscattered electrons intact. The resulting images exhibit much higher contrast and informative content compared to the conventional TEM. We present a comparison between 3D models of proteins generated using ZPC and conventional TEM data.Rendering and locating the particles in the ZPC-TEM images is much easier due to the high contrast. CTF fitting and demodulation is not necessary for the ZPC-TEM data which greatly simplifies the reconstruction process. Combined all the advantages of the ZPC-TEM technique can shorten dramatically the time required for generation of 3D model of unknown specimens at intermediate resolutions. If higher resolution is required the models can be further refined by adding small defocus conventional TEM data to the dataset. Theoretical and practical aspects in the application of ZPC-TEM are also discussed.